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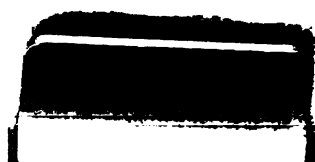
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THE ARMED STRENGTH OF THE GERMAN EMPIRE.

PART I

(With a Map).

PREPARED FOR THE INTELLIGENCE DIVISION OF
THE WAR OFFICE.

BY

CAPTAIN J. M. GRIERSON, R.A.,
Officiating Deputy-Assistant Quartermaster-General, Peshawar District.

AND EDITED BY

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P R E F A C E.

CAPTAIN J. M. GRIERSON, R.A., whose knowledge of the German Army specially qualified him for the task, having offered to prepare this edition of the Armed Strength of Germany in his leisure time, after his connection with this office had ceased, his services were gratefully accepted. Much assistance has been derived from Colonel L. V. Swaine, C.B., C.M.G., Military Attaché at Berlin, and the work has been carefully edited and brought up to the latest date by Colonel Bowdler Bell, D.A.A.G.

All changes introduced up to the date of "Armee-Verordnungs-Blatt," No. 16 of 29th May, 1888, have been inserted.

Much information has been derived from the articles under the heading "L'Armée Allemande sur le pied de guerre" in the "Revue Militaire de l'Étranger," 1883-84, but the conclusions in those articles, especially as regards certain new formations in war, have not invariably been followed.

The German word *Abtheilung* has been used throughout the work to signify a group of batteries, for want of an English word to which no other signification is already attached.

In the names of places, the rule has been observed to adhere to the accepted English names of Aix-la-Chapelle, Brunswick, Cologne, Hanover, and Munich, and in all other cases to retain the German spelling.

HENRY BRACKENBURY, Lieut.-General,
Director of Military Intelligence.

Intelligence Division,
War Office, 29th June, 1888.

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THE ARMED STRENGTH OF THE GERMAN EMPIRE.

CHAPTER I.

THE GERMAN EMPIRE.

THE German Empire, formed by the confederation of a number of German States, is governed by the Constitution of the 16th April, 1871. In foreign affairs, the Empire protects and represents the general and common interests of the Confederation, and, as regards internal affairs, it governs and administers the several States according to the constitution. The branches of the administration which are exclusively Imperial are Foreign Affairs, Navy, Army (except for Saxony, Württemberg, and Bavaria),* Posts and Telegraphs (except for Bavaria and Württemberg), the Supreme Court of Justice at Leipzig, and Imperial Bank, while the several States administer the Customs on their own frontiers for the general benefit of the Empire.

The States, 25 in number, and the Imperial Territory of Alsace-Lorraine, composing the Empire, with their area and population, are as follows:—

* The administration of the Armies of Saxony, Württemberg, and Bavaria is in so far separate from that of Prussia that each country has its own War Minister and War Ministry, but all these for war purposes are under the Emperor, and each is obliged to conform to the regulations that are issued by the Prussian War Ministry. Each country has a Military Attaché in Berlin, and Prussia has a Military Attaché in Munich. The war budgets for Saxony and Württemberg are made out in Berlin, and are contained in the same volume as the Prussian Estimates, while Bavaria has to contribute a certain sum, fixed yearly, for every 1,000 marks of the other budgets, for the support of her own Army.

States.	Area in English sq. miles.	Population, Dec. 1, 1885.
Kingdom of Prussia	137,066	28,318,458
„ Bavaria	29,375	5,416,180
„ Saxony	5,795	3,182,008
„ Württemberg	7,530	1,995,168
Grand Duchy of Baden	5,824	1,600,839
„ Mecklenburg-Schwerin	4,834	575,140
„ Hesse	2,965	956,566
„ Oldenburg	2,417	341,525
„ Saxe-Weimar	1,421	313,946
„ Mecklenburg-Strelitz	1,130	98,371
Duchy of Brunswick	1,526	372,388
„ Saxe-Meiningen	933	214,697
„ Anhalt	869	247,603
„ Saxe-Coburg-Gotha	816	198,829
„ Saxe-Altenburg	509	161,460
Principality of Waldeck	466	56,565
„ Lippe	445	123,250
„ Schwarzburg-Rudolstadt	340	83,836
„ Schwarzburg-Sonderhausen	318	73,606
„ Reuss-Schleiz	297	112,118
„ Schaumburg-Lippe	212	37,204
„ Reuss-Greiz	148	55,904
Free Town of Hamburg	158	518,620
„ Lübeck	124	67,658
„ Bremen	98	166,392
Imperial Territory of Alsace-Lorraine	5,580	1,564,354
Total	211,149	46,852,680

The population of the Empire was in 1875 42,727,360, and in 1880 45,234,061. The average density of the population is 221 per square mile. Excluding Hamburg, it is greatest in Saxony, where it reaches nearly 470 per square mile, and least in Mecklenburg-Strelitz, where it is 98 per square mile.

The bulk of the German population is Teutonic, but in the provinces of Posen, Silesia, East and West Prussia are 2,454,000 Slavs (Poles), who, with 2,800,000 Walloons and French, 150,000 Lithuanians, 140,000 Danes, and about the same number of Wends, Moravians, and Bohemians, make up 3,205,000 non-Germanic inhabitants, about 7 per cent. of the total population. In 1880, the population was made up of 28,330,967 Protestants, 16,232,606 Roman Catholics, other Christians 78,395, 561,612 Jews, and 30,481 of other or no religion.

The Crown of the German Empire is hereditary in the Prussian Royal Family in the male line, and its principal official is the Imperial Chancellor, who is President of the Federal Council. The Chancellor, who in his person represents the head of every Department of the State, watches over the execution of the laws of the Empire, countersigns and is responsible for Imperial orders and decisions, directs all branches of administration, and superintends public affairs within the limits prescribed by the constitution.

The legislative functions of the Empire are vested in the Bundesrath or Federal Council, which is composed of the Plenipotentiaries of the States of the Empire, and comprises in all 62 members, of whom 17 are nominated by Prussia, 6 by Bavaria, 4 each by Württemberg, Saxony, and Alsace-Lorraine, 3 each by Baden and Hesse, 2 each by Mecklenburg-Schwerin and Brunswick, and 1 each by the other States. The plenipotentiaries of each State must all vote one way or another, yes or no, on any question submitted to the Bundesrath. The Bundesrath decides on the propositions to be submitted to the Reichstag, and confirms or rejects the decision of the latter, draws up rules for the administration of and the general instructions necessary for the execution of the laws of the Empire, and takes measures to remedy imperfections noted in the working of the laws. A question is decided by a majority of votes. There are 11 standing committees named from among the members of the Bundesrath, to deal with the army, the navy, the customs, commerce, railways (including posts and telegraphs), justice, accounts, foreign affairs, Alsace-Lorraine, the constitution, and administrative regulations. The Bundesrath is called together every year, and may be assembled with or without the Reichstag, but the latter cannot be assembled without the Bundesrath. Members of the Reichstag cannot sit in the Bundesrath. No declaration of war can be made by the Emperor without the consent of the Bundesrath, except in the case of an attack on the territory of the Confederation.

While the Bundesrath is the body representing the States of Germany, the Reichstag represents the people. Its members are elected by universal suffrage of all males over 25 years of age in full possession of their rights as German citizens, with the exception of officers and soldiers of the standing army, and hold office for the current legislative period only. There are in all 397 members, of whom 236 are Prussian, 48 Bavarian, 23 Saxon, 17 from Württemberg, 14 from Baden, 9 from Hesse, 6 from Mecklenburg-Schwerin, 3 each from Oldenburg, Saxe-Weimar, Brunswick, and Hamburg, 2 each from Saxe-Meiningen, Anhalt, and Saxe-Coburg-Gotha, 15 from Alsace-Lorraine, and 1 from each of the other States. The legislative period of the Reichstag is three years, but in future, at the end of the present period, it will be elected for five years. It must be called together once a year, and usually meets in November, adjourns for four weeks at Christmas, and is prorogued in April. No adjournment can exceed 30 days. The Emperor has the right to prorogue and dissolve the Reichstag, and in case of dissolution new elections have to take place within 60 and a new session has to open within 90 days. The members of the Reichstag are unpaid, but have a free pass to travel over all the railways of the Confederation during the session and the eight days preceding and following it. The President of the Reichstag is elected by the members. The debates are public, and laws are read over and deliberated on three times before

being passed, the first time as a whole, the second and third times article by article. The second reading is generally decisive for the passing or rejection of a bill. Decisions are taken by absolute majorities of votes, and at least half the number of members—199—must be present. The sanction of the Bundesrath is required before any bill can become law, and it must be finally approved by the Emperor and countersigned by the Imperial Chancellor.

In the present state of German politics, there are, roughly speaking, six parties, the Ultra-Conservatives, or representatives of the old feudal nobility, the Conservatives, comprising Old Conservatives and Liberal Conservatives, the Ultramontane Catholics, the Particularists (Hanoverians, Poles, and Alsace-Lorrainers), the National Liberals, whose liberal tenets are mingled with a determination to support German unity at all costs, and, finally, the Progressionists, Democrats, and Social Democrats.

The following are the Imperial offices (*Reichsämter*):—

1. The Ministry of Foreign Affairs.
2. The Imperial Home Office.
3. The Imperial Admiralty.
4. The Imperial Ministry of Justice.
5. The Imperial Treasury.
6. The Imperial Post and Telegraph Office.
7. The Committee on the Debt of the Empire.
8. The Financial Office.
9. The Administration of the Pension Funds.
10. The Railway Office.
11. The Alsace-Lorraine Railways Office.
12. The Imperial Bank Office.

The heads of these departments do not form a Cabinet, but act independently under the general supervision of the Chancellor.

Germany has no colonies properly speaking, but in 1884-86 she took under her protection the following tracts on the coast of Africa:—On the west and south-west coast; (1.) Togo Land, on the Slave Coast, lying between the eastern boundary of the British Gold Coast Colony and Agweh, in the French Protectorate. (2.) The Cameroons, in the Bight of Biafra, extending from the Rio del Rey to the Campo. (3.) Damara Land and Namaqua Land, from the Cunene to the Orange River, excepting the British settlement of Walfisch Bay. On the east coast; (4.) The territory extending from the Wange, on the north, to the Rovuma, in the south. (5.) The small territory of Witu, on the coast, extending from the north of Kipini to the northern extremity of Manda Bay. The inland boundaries of these protectorates and the limits of the German spheres of influence are mostly fixed by agreements made with the various European Powers.

In 1885, by agreement with Great Britain, Germany took

possession of the northern portion of New Guinea lying east of the 141st degree of east longitude and to the north of British New Guinea, the area being about 70,300 square miles. This territory is now named Kaiser Wilhelm's Land. The New Britain and other islands lying between 141° and 154° east longitude and 8° south latitude and the equator, with an area of about 18,150 square miles, were annexed in 1885 under the name of the Bismarck Archipelago, as were also the Marshall and other groups lying east of the Caroline Islands. In 1886 the Islands of Bougainville, Choiseul, and Isabel, in the Solomon Group, with an area of 6,000 square miles, were likewise annexed.

To protect its interests in these regions, Germany has three small squadrons, the West African, the East African, and the East Asiatic (see Chapter XXIII), but no special colonial troops have been formed. As yet she has not succeeded in diverting the stream of emigration to any of her protectorates, indeed few of them are at all fitted for European colonisation. In 1886 the number of emigrants leaving German ports and Antwerp was 76,687. Of these, 72,403 went to the United States, 330 to Canada, &c., 2,045 to Brazil, 1,068 to other American countries, 191 to Africa, 116 to Asia, and 534 to Australia. The number of emigrants has steadily diminished of late years. In 1881 it reached 210,547, and in 1885 it was 103,642.

Education is under the control of the individual States, and is general and compulsory throughout Germany. Every town or community is bound to maintain a school, supported by the taxes and administered by the local authorities. All parents are compelled to send their children to these elementary schools, whether they can pay the fees or not, but these are very low, ranging from 10 pfennige a week in a village school to one mark a month in towns. No compulsion exists in reference to higher educational establishments than elementary schools, but parents who send more than one child to any school supported by the community have a reduction made in the charge, and a limited number of pupils are admitted free. Thus the higher schools such as the *Realschulen* (commercial schools) or *Gymnasien* (colleges) are not established merely for the rich, but are open to the poorest, the fees being extremely low. In 1881-82 there were 57,000 elementary schools in Germany, with 7,100,000 pupils, and 1,432 higher schools with 257,495 pupils, besides (in 1883) nine technical high schools with 4,129 students, and 994 industrial and trade schools. There are 21 universities, which in 1886 were attended by 27,784 students. It may be noted that no university town in Germany is without an infantry garrison, so that one-year volunteers may pursue their studies while fulfilling their military obligations. So general is education in Germany that in 1886-7 only 1.15 per cent. of the recruits could neither read nor write.

The German railways are divided into three categories: State railways, railways belonging to companies but worked by

the State, and railways belonging to companies and worked by them. In March, 1886, there were 25,048 English miles of railway completed and open for public traffic, of which 21,460 miles were State lines, and 668 were private lines worked by the State. At the same time the rolling stock consisted of 12,532 locomotive engines, 22,873 passenger carriages, and 253,933 wagons and trucks. In 1882, 171,763 persons were employed on the railways. The gauge of all German lines is 4' 8½", and the rails are flat-bottomed. It may be mentioned that almost all the German lines belong to the German Railway Union, which comprises 48 German, 33 Austro-Hungarian and 11 Belgian, Dutch, Roumanian, and Russian lines, and which has been established for the purpose of community of action in defending the interests of railway lines and conciliating them with those of the public.

The posts and telegraphs form, except for Bavaria and Württemberg, a branch of the Imperial Administration, and their receipts form part of the Imperial revenue. For administrative purposes, the Empire, with the exception of the above two states, is divided into 40 districts, each with from 100 to 270 offices. At the end of 1885 there were 55,328 miles of telegraph line, and 197,939 miles of wire. The number of post-offices was 17,452, with 13,118 telegraph stations and 93,845 persons employed.

The trade and commerce of the Empire are under the administration and guidance of special laws and rules emanating from the *Zollverein* or Customs League, which embraces the whole of Germany, except the free ports of Hamburg and Bremen. The functions of the old *Zollverein* Parliament are now merged in those of the Reichstag, and all the customs receipts are paid into a common exchequer, and distributed, *pro rata* of population, among the States of the Empire. The chief sources of revenue are customs duties, mainly on imports. The total value of the imports in 1885 was 149,498,450*l.*, and of the exports, 145,762,850*l.*

The commerce of the *Zollverein* was divided as follows in 1885:—

	Imports from (in 1000 marks).	Exports to (in 1000 marks).
German Free Ports	507,497	704,162
Great Britain	462,584	453,020
Austria-Hungary	391,645	294,992
Russia	344,531	150,874
Switzerland	137,060	154,150
Belgium	294,430	147,700
Netherlands	215,126	230,300
France and Algeria	231,036	251,895
British India	25,872	5,586
North America	122,573	157,799
Central and South America	79,203	38,225
Africa	12,056	7,217
Other countries	176,356	319,387
Total	2,989,969	2,915,257
In £ sterling	£149,498,450	£145,762,850

There was besides a direct transit trade of 1,256,813,000 marks, or 62,840,650*l.*, and the gross produce of the customs was 235,561,000 marks, or 11,778,050*l.*

As regards live stock, the following are the statistics of domestic animals according to the census of 1883 :—

Horses	3,522,545	(of which 13,823 kept for stud purposes, and 107,147 for military).
Mules and asses	9,795	
Cattle.. .. .	15,786,764	
Sheep	19,185,362	
Swine.. .. .	9,205,791	
Goats.. .. .	2,639,994	

The following was the distribution of the mercantile navy . . of Germany, on January 1st, 1886 :—

	Baltic Ports.		North Sea Ports.		Total Shipping.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Sailing vessels..	1,283	298,569	2,188	563,275	3,471	861,844
Steamers ..	327	122,797	337	297,808	664	420,605
Totals ..	1,610	421,366	2,525	861,083	4,135	1,282,449

And the following table shows the shipping at all German ports in 1884 :—

	With Cargoes.		In Ballast.	
	Number.	Tonnage.	Number.	Tonnage.
Entered	49,452	9,313,900	10,920	900,261
Cleared	44,339	7,133,357	15,837	3,055,199

About three-fifths of the vessels and one-sixth of the tonnage were German, and 12 per cent. of the whole number, and 46 per cent. of the tonnage were British.

The standard of value for German money is gold, and the unit is the *mark*, which is divided into 100 *Pfennige*, and the approximate value of which is an English shilling. The gold coins are 20, 10, and 5 mark pieces, the silver coins 20 and 50 pfennig, 1, 2, 3,* and 5 marks, the nickel coins 5 and 10 pfennig pieces, and the copper coins 1 and 2 pfennig pieces.

The metrical system of weights and measures came into force in 1872.

The common expenditure of the Empire is defrayed from the revenues arising from customs, certain branches of excise, and the profits of the posts and telegraphs. The individual States may be assessed in proportion to their population to make up a deficit. The following statement shows the revenue and expenditure for five years, the figures for 1886 and 1887 being from budget estimates:—

Year ending 31st March.							Revenue.	Expenditure.
							£	£
1883	..	..	..	..	..	..	30,108,650	30,219,500
1884	..	..	..	..	..	..	28,348,260	29,362,590
1885	..	..	..	..	..	..	29,684,800	30,729,700
1886	..	..	..	..	..	..	30,616,250	30,529,260
1887 (estimated)	..	..	..	..	..	..	34,869,600	34,591,000

The following table gives the estimated total revenue and expenditure for the year ending March 31st, 1888, in 1,000 marks:—

* The "thaler."

Head of Expenditure.	1,000 Marks.	Revenue.	1,000 Marks.
I. Bundesrath .. { (taken from No. VIII).		I. Customs and Ex- cise	392,073·0
II. Reichstag	383·3	II. Stamps	27,686·0
III. Imperial Chancery ..	141·4	III. Posts and Tele- graphs	29,370·1
IV. Foreign Office	7,757·0	IV. Printing Office ..	1,078·2
V. Home Office	7,977·2	V. Railways	16,696·6
VI. Army	864,301·4	VI. Imperial Bank ..	2,108·5
VII. Navy	38,338·2	VII. Various Depart- ments	8,429·2
VIII. Justice	1,924·0	VIII. Invalid Fund ..	26,846·1
IX. Imperial Treasury ..	153,404·4	IX. Interest of Imperial Funds	1,200·0
X. Railways	298·7	X. Extraordinary Re- ceipts	229,222·6
XI. National Debt	20,669·5	XI. Federal Contribu- tions	185,937·3
XII. Exchequer Office ..	529·8		
XIII. Pension Fund	24,844·8		
XIV. Invalid Fund	26,846·1		
<hr/>		Total revenue	921,647,600
Total ordinary expendi- ture	646,915,800		£46,082,380
	£32,845,790	Surplus	£861,470
Extraordinary Expenditure:—		Deficits for 1884–85 and 1885–86	£870,920
Home Office	20,388·3		
Army	210,996·6		
Navy	9,142·8		
Various	16,974·7		
<hr/>			
Total extraordinary expenditure	257,502,400		
	£12,875,620		
Grand total expendi- ture	904,418,200		
	£45,220,910		

For 1886–87 a deficit of 24,000,000 marks is expected, and to meet the extraordinary expenditure of 1887–88 a loan of 66,000,000 marks will be required. For 1886–87, the total Federal contributions amounted to 139,218,400 marks.

For October 1, 1886, the total funded debt is estimated to amount to 460,000,000 marks, or 23,000,000*l.*, the whole debt bearing interest at 4 per cent. Besides the funded there exists an unfunded debt, represented by Imperial treasure bills (*Reichs-Kassenscheine*) outstanding to the amount of 137,527,800 marks, or 6,876,390*l.*, on 1st April, 1886.

As a set-off against the debt of the Empire, there exist a variety of invested funds (34,914,017*l.*) comprising the fund for invalids, 514,360,717 marks, the fortification fund, 30,950,600 marks, the fund for Parliamentary buildings, 20,996,400 marks, and a war treasure fund, 120,000,000 marks. The latter fund is termed the *Reichs-Schatz*, or Imperial treasure, and is kept in gold in the fortress of Spandau, bearing no interest, and destined to cover the first expenses of mobilisation of the army and navy. It can be touched for no other purpose.

The German Army Budget forms Chapter VI of the Imperial Budget, and is divided into 30 separate votes, numbered in the general series from 14 to 43. These votes apply to the whole army except the Bavarian contingent, the sum for which

is voted *en bloc* in vote 44. The estimated budgets for 1886-87 and 1887-88 are:—

Vote.		In 1,000 Marks.	
		1886-87.	1887-88.
14	War Ministry	1,880·2	1,881·2
15	Pay Department	266·1	264·7
16	Intendance	1,739·0	1,769·5
17	Chaplains' Department	644·1	655·9
18	Judge-Advocate-General's Department ..	688·3	696·1
19	Pay of Corps, Division, and Brigade Commanders	2,559·6	2,637·8
20	Pay of Governors, Commandants, and Town-Majors of fortresses and towns ..	633·4	633·4
21	Adjutants and Officers holding special appointments	967·8	971·7
22	General Staff and Topographical Branch ..	1,765·7	1,837·4
23	Engineer and Pioneer Officers	1,790·0	1,830·3
24	Pay of the troops	99,588·2	107,512·4
25	Forage and rations	78,127·6	81,867·3
26	Clothing and equipment	21,583·7	22,809·9
27	Garrison administration and allowances ..	33,704·2	36,354·5
28	Pay of Military Buildings Officials ..	384·2	482·2
29	Medical Department	6,131·4	6,446·5
30	Administration of train-depôts and repair of their material	791·7	835·5
31	Rations for recruits and Reserve men ..	2,507·5	2,656·4
32	Purchase of remounts	5,670·3	5,829·6
33	Administration of Remount Depôts ..	1,563·8	1,594·8
34	Travelling, &c., allowances	5,358·6	5,583·0
35	Military education	5,033·5	5,127·1
36	Military prisons	804·9	799·4
37	Artillery and small-arms	13,088·0	14,023·4
38	Technical artillery establishments ..	557·3	660·7
39	Building and repair of fortresses ..	2,581·4	2,575·8
40	Supplementary lodging allowances ..	7,449·8	7,869·2
41	Special pensions for soldiers and officials on the active list	110·9	121·4
42	Contribution to the Military Widow's Fund	1,081·6	1,087·9
43	Miscellaneous	120·1	123·5
	Total	299,172·9	317,538·5
44	Bavarian Army	43,863·8	46,762·9
	Grand Total	343,036·7	364,301·4

The Imperial Naval Budget forms Chapter VII of the General Budget, and is divided into 20 votes, Nos. 45 to 64 of the general series. The estimated expenditures for 1886-87 and 1887-88, are as follows:—

Vote.		In 1,000 Marks.	
		1886-87.	1887-88.
45	Admiralty	574·3	608·1
46	Hydrographic Office	155·5	158·9
47	German Maritime Observation Office ..	225·5	225·5
48	Intendance of stations	189·6	189·6
49	Naval Justice	27·7	27·8
50	Chaplains' Department	43·6	45·7
51	Pay	7,277·7	7,738·9
52	Naval stores and repairs for ships in com- mission	5,911·8	5,811·0
53	Rations	3,152·7	3,209·5
54	Clothing	96·7	95·1
55	Garrison administration and allowances ..	797·2	823·9
56	Supplementary lodging allowances ..	624·0	656·0
57	Hospitals	555·0	572·3
58	Travelling allowances and freights ..	347·0	430·0
59	Naval education	125·0	126·0
60	Dockyards	14,161·3	14,494·8
61	Artillery and fortifications	1,950·4	2,070·5
62	Torpedoes and submarine mining	544·6	690·4
63	Tugs, lightships, buoys, &c.	187·5	199·7
64	Miscellaneous	154·1	169·5
	Total	37,101·2	38,338·2

CHAPTER II.

THE MILITARY CONVENTIONS AND OTHER LAWS
AFFECTING THE ARMY.

THE relations between the Emperor and Commander-in-Chief, and the various contingents of the federated States are settled by the military conventions concluded in 1867 and 1870-72 between Prussia and those States. The entire land forces of the Empire form one single army at the disposal of the Emperor in peace and war, and the expenses and burdens of the service are borne equally by all States of the Confederation. The Commander-in-Chief of the Army of the Confederation is bound to see that the troops are all present and fit for duty, and that uniformity of system is maintained in all branches of the service. To this end he has the power to inspect the different contingents at any time, and, in the event of any defects being found, to give orders with a view to their remedy. He determines the effectives, grouping, and distribution of the contingents of the army, as well as the organisation of the Landwehr, and has the power, within the limits of the constitution, to fix the garrisons and to order the mobilisation.

of any part of the army. Before making an inspection, he signifies his intention to the sovereign of the contingent concerned. Every German soldier is bound to obey unconditionally the orders of the Emperor as Commander-in-Chief of the Army of the Confederation, and a clause to this effect is included in the oath of allegiance. The Bavarian troops, however, are only so bound in war. The power to erect fortresses within the limits of the Confederation rests with the Commander-in-Chief, who demands the necessary money in the Bundesrath and Reichstag. He is also empowered, in the event of the public safety being threatened in any part of the Empire, to declare such part in a state of siege. Except in the case of Bavaria and Württemberg, the surplus of the military budget is in no case considered as belonging to any individual government, but must be handed over to the treasury of the Confederation.

The States comprised in the German Empire are in different conditions of dependence on the Commander-in-Chief as regards their military system, according to the nature of the conventions which have been concluded.

The contingents of Schwarzburg-Sondershausen, Waldeck, Lippe-Detmold, Schaumburg-Lippe, Hamburg, Bremen, and Lübeck were broken up in 1867, and recruits from those States are treated exactly as Prussian recruits. Those of Oldenburg, Anhalt, Saxe-Weimar-Eisenach, Saxe-Meiningen, Saxe-Altenburg, Saxe-Coburg-Gotha, Schwarzburg-Rudolstadt, and Reuss (in both lines) were in 1867 reformed on the Prussian model and taken over into the Prussian Army. Brunswick at first retained considerable autonomy, but in 1886 its troops were taken over under the same conditions as the above. For all those last-named contingents the King of Prussia is military sovereign. He appoints all their officers, and their whole administration is in the hands of the Prussian War Ministry. As far as possible, the men of a contingent are kept together in the same unit. The sovereigns of those States have the same powers over the troops stationed in their States as a general commanding an army corps, and have a right to all the honours due to such.

Alsace-Lorraine is administered solely by the Prussian War Ministry. Its recruits are, for obvious reasons, distributed over other Prussian Army Corps.

By the Convention of 25th November, 1870, the Baden contingent is to remain intact, but is still an integral part of the Prussian Army, the King of Prussia having sovereign rights over it and appointing all officers, and the Prussian War Ministry administering it in all respects.

The troops of Hesse-Darmstadt, by the Convention of 13th June, 1871, form a division by themselves. They and those of the two Mecklenburgs (by the Conventions of 19th and 23rd December, 1872) are, as far as command and administration go, an integral part of the Prussian Army. Their officers are appointed by the Emperor-King, and take the oath of allegiance

to him, but at the same time engage to further the interests of their respective sovereigns as long as they remain in the contingent, and to guard him from harm and evil.

The contingents of Saxony (Convention of 7th February, 1867) and Württemberg (Convention of 21st–25th November, 1870) are administered by their own War Ministries, and form separate army corps, but partake of the advantages and share in the duties of the institutions of the Prussian Army which they do not themselves maintain, such as educational establishments, Great General Staff, various committees, &c. Their Kings have the command, under the Emperor, of their armies and appoint their own officers. The Württemberg officers are interchangeable with the Prussian. The armies of those States are clothed and equipped on the Prussian model with only slight variations, and their regiments, &c., are numbered in the same series as those of the Prussian Army. As above stated, any surplus in the Württemberg army budget is retained by that State, but in Saxony it is handed over to the Imperial Treasury. Both defray the cost of maintenance of their army corps from the sum of money placed at the disposal of the Empire, and, in addition, their share of the establishments used in common with the Prussian Army.

The Bavarian Army, by the Convention of 23rd November, 1870, is under the independent administration and command of its own sovereign, but on the outbreak of war it passes under the orders of the Commander-in-Chief of the Federal Army. Bavaria bears the expenses of maintaining her military force, and the fortresses of Ingolstadt, Germersheim, and Neu-Ulm, as well as any others which may in future be erected on her territory by Imperial order. She has also to bear a share in the expenses of their building and equipment with the other States of the Empire in proportion to her population. In matters of organisation, formation, training, pay, and mobilisation, Bavaria is bound to assimilate her regulations to those of the Confederation, but is not required to assimilate the uniforms or badges of rank of the army to those of the rest of the Federal Army. Good common sense has, however, supplied what treaties were chary of enforcing for sentimental reasons; and, although the traditional colours have been retained, the distinctive headdress has been abolished, and the cut, distinguishing colours of arms (*e.g.*, artillery, pioneers, and train), and badges of rank of the Prussian army have been adopted.

There are two laws—as to railways* and as to requisitions—which so closely concern the army, that they should here find a place.

Railways which may be considered necessary for the defence of Germany, or for inter-communication, may, by a Bill, be constructed at the expense of the Empire, or be conceded to private firms for construction, with powers of expropriation, even

* This law forms part of the Constitution.

against the wishes of persons through whose property they run. Every railway company is bound to consent to other lines of rail joining its own lines at the expense of the former. The provisions by which existing railway companies have the right to protest against the construction of parallel or competing lines are, without prejudice to acquired rights, cancelled for the whole Empire, and no such right of protest can be allowed in the future. Railway companies must comply, without delay, with the demands of the authorities with regard to the utilisation of railways for the defence of Germany. (The following sentences are not applicable to Bavaria.) The Governments of the Confederation have bound themselves, in the interest of the general welfare, to administer the German railways as one single network, and, for this purpose, to cause any new lines to be constructed and equipped on one uniform system. For this purpose, too, general traffic rules have been framed, and similarity in the police arrangements introduced. The Imperial Government is responsible that the railway companies keep their lines in good order, and maintain the material in sufficient quantity to meet all requirements.

The second law mentioned above is that on requisitions, of which the following is a *précis* :—

Billets may be demanded when the barrack accommodation in a garrison town is insufficient for men or horses, or on the line of march, or at manœuvres. When troops are thus billeted for more than six months in one place, the community may be called on to supply special buildings for officers' quarters and guard-rooms. All buildings, or parts of buildings, except those absolutely required for purposes of habitation, commerce, or agriculture, may be taken up for this purpose. Billets are requisitioned through and distributed by the local authorities, and are paid for at a rate settled every five years, and divided into five classes, according to the size of the place and the cost of living.

Troops on the line of march are fed by the people on whom they are billeted, at a fixed price, and the soldier must be content with the fare of his host. Forage for a detachment of more than 25 horses cannot be requisitioned when it is possible to procure it in any other manner, and any person required to furnish more than that quantity can, on demand, have it repaid in money or kind at the nearest military magazine. Forage is paid for at the local monthly market rates. Rations and forage can, as a rule, only be requisitioned on a route issued by the competent civil authorities; but, in cases of emergency, requisitions can be made without a route, directly on local authorities or even on private individuals.

Horses, carriages, and drivers may be requisitioned when they cannot be obtained by contract at local prices, but only for one day, and at rates fixed from time to time by the Bundesrath; princely families, ambassadors, the studs, the military administrations, medical practitioners, veterinary surgeons, and

post-masters are exempt from these requisitions. Boats, forges, fountains, and drinking places may also be requisitioned.

Troops have all rights of manœuvring over any land, but may not occupy or pass through houses, courts, gardens, or vineyards. The damages done during manœuvres are assessed by a committee composed of a civil official, a military officer, a military official, and two experts elected locally.

War requisitions may be lawfully made from the first day of mobilisation. They may only be imposed when it is impossible to provide otherwise for the wants of the troops, and are paid for out of the Imperial War Treasure. The communities are then bound to furnish billets for men and horses to their utmost ability, to feed the same, to furnish all the horses, carriages, boats, &c., required, to place any buildings required at the disposal of the military authorities, and to furnish building materials of all descriptions—straw, firewood, arms, medical stores, &c., as far as can be produced from their own resources; such requisitions are made on the local or parish authorities, or, in case of emergency, direct on the inhabitants. In case of non-compliance, force may be used. The local authorities are not bound to reimburse the price of the supplies furnished until the money has been received by them, but they may do so out of local funds if any person has had to supply more than his fair share. Compensation is paid for billets only in the case of the troops usually forming the peace garrison of the place, the reserves which come to join them, and the dépôt troops remaining in the place. Forage is paid for at the average price of the last ten years of peace, leaving out the highest and lowest. Carriages may be taken for any time, but if retained for more than 48 hours the drivers have a right to rations and quarters, and the carriages, animals, and harness must have their value assessed beforehand in case of loss.

If the army in the field cannot be otherwise supplied, the Bundesrath may order general requisitions of cattle, flour, oats, hay, and straw, over the whole country, and fix the amounts to be paid for the four latter. The Empire is divided into districts (*Lieferungs-verbände*) for this purpose, and the authorities at the head of these divide the total amount to be supplied among parishes, &c. The prices for cattle are fixed locally by experts. Receipts for the value of supplies delivered, bearing 4 per cent. interest, are given in payment of such requisitions, and the date on which they will be redeemed is notified publicly.

The regulations for the horse conscription are given in Chapter XIX.

Every railway company is bound to keep in stock all the fittings required for their rolling stock and stations during the transport of troops, to carry out the said transport as required, and to lend its *personnel* and material for the repair or working of any line. No compensation is allowed for the fittings of carriages, &c., but the transport of the troops is paid for at rates fixed by the Bundesrath. The railway administrations on or

near the theatre of war have to obey the orders of the military authorities as to the organisation, continuation, suspension, and resumption of their train service.

CHAPTER III.

THE LAND FORCES OF THE GERMAN EMPIRE.

THE Land Forces of the German Empire consist in peace of 18 Army Corps, each of which forms a little army in itself, commanded and administered by the General Officer commanding, who is entirely responsible for its efficiency and preparedness for war, and who also superintends all arrangements for its recruitment, the central authorities only exercising a general supervision over the whole Army. In short, decentralisation in its widest sense is the keynote of the whole German military system.

Of these 18 Army Corps, 14, the Guard, 1st to 11th, 14th, and 15th, are composed of Prussian troops or troops administered by the Prussian War Ministry, with the exception of 4 regiments of infantry, 1 of foot artillery, and 1 of cavalry from the other States attached to the 15th Army Corps; the 12th is formed by the Saxon, the 13th by the Württemberg, and the 1st and 2nd Bavarian Corps, as their name implies, by the Bavarian Army. The troops of the Grand Duchy of Hesse form a division by themselves attached to the 11th Army Corps.

Excluding all special formations and establishments, these 18 Army Corps comprise in all:—

166 Regiments of infantry	518 battalions.
21 Battalions of rifles	21 "
Total infantry	534 "
93 Regiments of cavalry	465 squadrons.
37 Regiments of field artillery	364 batteries =
	1,538 guns.
14 Regiments of foot artillery	28 battalions.
3 Battalions of foot artillery	3 "
Total foot artillery	31 "
19 Battalions of pioneers	19 "
1 Company of telegraphists	1 "
Total pioneers	19½ "
1 Railway regiment	4 "
1 Railway battalion	1 "
Total railway troops	5 "

18 Train battalions	..	..	..	..	54 companies.
1 Train company	..	..	..	..	1 „
					<hr/>
Total train	..	..	..	..	55 „
					<hr/>

277 Landwehr Battalion District Staffs.

The total peace strength of the Army is:—

19,262 Officers.
 1,777 Medical Officers.
 1,777 Military Officials.
 468,409 Non-commissioned Officers and men.
 8,400 (About) one-year volunteers.
 4,167 Administrative employés.

Total 508,782 All ranks.

105,679 Horses.

On mobilisation, the Army is divided into—

I. The Field Army (*Feld-Armee*) for operations in the field, comprising—

- (a.) Field Troops (*Feld-Truppen*), or the standing army mobilised.
- (b.) Field Reserve Troops (*Feld-Reserve-Truppen*), formed on mobilisation on cadres borrowed from the active army, and destined to support or co-operate with the field troops.
- (c.) Special Field Formations (*Besondere Feld-Formationen*) of the artillery and engineers (parks, &c.).

II. The Garrison Army (*Besatzungs-Armee*), which remains at home to preserve order and replace losses in the Field Army, comprising—

- (a.) Depot Troops (*Depôt-Truppen*).
- (b.) Garrison Troops (*Besatzungs-Truppen*), and eventually
- (c.) Landsturm Troops (*Landsturm-Truppen*).

To both categories belong the formations for the lines of communication and railways (*Etappen und Eisenbahn Formationen*).

In consequence of the new military law re-introducing the 2nd Ban of the Landwehr, a great addition has lately been made to the garrison troops, and the Government has the further advantage of having a control over them in peace. The vote of credit accompanying the new law has enabled field equipment to be purchased for the vast bulk of those troops, and there is no doubt that, organised in so-called “Landwehr Divisions,” they would take the field, their places at home being taken by the Landsturm. The calculations of war strength have been made on the assumption that they would be so employed.

It may here be remarked that the figures given as to the

number of units in each category rest a good deal on surmise, as the German plan of mobilisation is kept entirely secret, and no so-called "mobilisations," which only lead to false conclusions and serve to betray intentions, are attempted in peace. In the succeeding chapters of this work, the reasons which lead to the belief that the figure given represents the probable number of formations are invariably stated.

I. THE FIELD ARMY.

(a.) *Field Troops.*

The field troops will be formed on mobilisation into (probably) 4 armies, comprising 19 army corps and 9 cavalry divisions. The German General Staff are known to be opposed to an army corps having more than 2 divisions, so that it is probable that the 25th Division and one of the divisions of the 15th Army Corps will be formed into a 16th Army Corps, giving 19 in all, of which one, the 12th (Saxon), will have three, the others two infantry divisions. The normal composition of an army corps is—

Two infantry divisions, each of 2 brigades = 4 regiments of infantry.

1 regiment of cavalry.

1 regiment of field artillery = 6 batteries.

1 pioneer company with bridge train.

1 bearer company.

Corps Artillery :—3 to 6 field and 1 or 2 horse batteries.
10 ammunition columns.

1 rifle battalion
1 pioneer company } attached to one of the divisions.

10 Commissariat columns,

1 bakery column.

1 horse dépôt.

1 bearer company.

12 field hospitals.

Corps bridge train.

The following modifications in the peace "order of battle" will have to be made :—

Infantry.—The Guard, 5th, 6th, and 1st Bavarian Corps have each one, and the 1st, 2nd, and 15th Corps two regiments above those required to give each division four regiments, while the 12th and 13th Corps are each a regiment short of that number. The deficit in the 12th and 13th Corps will undoubtedly be filled up by the transfer on mobilisation to those Corps of the 105th and 126th Regiments respectively from the 15th Corps.

The Guard Corps will undoubtedly, as in 1870, take the field with nine regiments. Seven regiments (one each in the 5th, 6th, and 1st Bavarian, and two each in the 1st and 2nd Corps), together with the Bavarian Brigade of the 15th Corps, are available above requirements. These may either take the field with their corps or be combined into separate formations.

The Divisions of the Guard, 12th, and 1st and 2nd Bavarian Corps will each have a rifle battalion, while the 8th, 13th, 14th, and 16th Corps will have no such battalion.

Fourth field battalions will be formed for a certain number of regiments having only three battalions in peace, and will probably join their regiments.

Cavalry.—Of the 93 regiments, 39 will be required as divisional cavalry, leaving 54 available for the formation of cavalry divisions.

Field Artillery.—In the 1st to 11th* and 1st and 2nd Bavarian Corps, presuming each to give up one battery of horse artillery to the cavalry divisions, each division will have a regiment of 2 *Abtheilungen* of 6 batteries and the corps artillery will be composed of an *Abtheilung* of 3 field and another of 2 horse batteries. The total number of batteries taking the field with the corps will be $17 = 102$ guns.

The Guard Corps will probably give up 2 horse batteries to the Guard Cavalry Division and will therefore only have 16 batteries = 96 guns.

In the 12th Corps, a probable arrangement is that each division will have an *Abtheilung* of 4 batteries, while 2 *Abtheilungen* of 3 field batteries, and 1 of 2 horse batteries (1 horse battery being given up to a cavalry division) will form the corps artillery; total 20 batteries = 120 guns.

In the 13th Corps, each division will have the normal strength of field artillery, while the corps artillery will have 2 *Abtheilungen* of 3 field batteries each, total 18 batteries = 112 guns. In this case, reserve and dépôt formations will have to be provided for without special cadres, so that it is possible that the corps artillery may only have 3 or 4 field batteries.

The 14th Corps, after giving up its horse battery, will have the normal strength of field artillery for its divisions and only 3 batteries in the corps artillery; total 90 guns.

The 15th Corps, having to provide for no reserve formations, will probably mobilise all its batteries. Three will go with the detached division, and the corps will then have the same number of batteries as the 14th.

For the 16th Corps there will be available the 6 batteries of the 25th Division (the horse battery going to a cavalry division) and 3 batteries from the 15th Corps. Six new batteries will have to be formed to bring it up to the same strength as the 14th Corps. Possibly the horse artillery *Abtheilung* of the 8th Corps (now at Metz) may give 2 batteries to the Corps Artillery

* The 25th Division not being included in the 11th Corps.

of the 15th or 16th Corps, leaving the 8th Corps with only 90 guns.

Pioneers.—One extra field company will have to be formed by the 12th, and 3 by the 15th Battalion, the former also forming 1, and the latter 2 additional divisional bridge trains.

Train.—The 15th Battalion and Hessian company between them will have to mobilise the train formations for the 16th Army Corps.

The 54 cavalry regiments, together with the 18 batteries of horse artillery detached from army corps, will probably form 9 cavalry divisions, each of 6 cavalry regiments and 2 batteries of horse artillery.

The field troops will, under the above suppositions, comprise—

- 534 Battalions of infantry and rifles of the standing army.
- 88 Newly formed 4th field battalions.
- 372 Squadrons of cavalry.
- 338 Field (incl. 47 horse) batteries = 2,028 guns.
- 81 Battalions of foot artillery with 1,352 siege or position guns.
- 58 Companies of field pioneers.
- 42 Companies of siege pioneers.
- 32 Companies of railway troops.
- 215 Ammunition columns.
- 39 Divisional bridge trains.
- 19 Corps bridge trains.
- 25 Telegraph sections.
- 215 Commissariat columns.
- 58 Bearer companies.
- 41 Bakery columns and detachments.
- 19 Horse depôts.
- 284 Field hospitals, &c.

with a total strength of—

- 22,377 Officers.
- 4,247 Medical officers.
- 7,928 Officials of all classes.
- 942,408 N.-C. Officers and men.
- 280,472 Horses.
- 2,028 Field guns.
- 1,352 Siege guns.
- 40,081 Other carriages.

(b.) *Field Reserve Troops.*

There would be formed on mobilisation—

- 805 Battalions of reserve infantry.
- 10 Battalions of reserve rifles.
- 18 Reserve cavalry regiments.
- 18 Reserve regiments of 6 field batteries = 648 guns.
- 29 Mobilised Landwehr foot artillery battalions.
- 18 Reserve field pioneer companies.
- 72 Reserve ammunition columns.
- 18 Reserve divisional bridge trains.
- 36 Reserve commissariat columns.
- 18 Reserve bearer companies.
- 54 Reserve field hospitals.

With the exception of the Landwehr foot artillery battalions, these troops would be formed into 18 Reserve Divisions of

varying strength in infantry (12 to 20 battalions), and each with a cavalry regiment, 6 batteries, a pioneer company, a divisional bridge train, and a proportion of columns and auxiliary services.

The total strength of the field reserve troops would then be—

9,536 Officers.
1,800 Medical officers.
1,933 Officials of all classes.
354,915 N.-C. Officers and men.
72,963 Horses.
648 Field guns.
9,872 Other carriages.

The field army therefore will comprise 19 Army Corps, 9 Cavalry Divisions, and 18 Reserve Divisions, with a total strength of—

31,913 Officers.
5,547 Medical officers.
9,861 Officials of all classes.
1,297,323 N.-C. Officers and men.
353,435 Horses.
2,876 Field guns.
1,352 Siege guns.
49,953 Other carriages.

II. THE GARRISON ARMY.

(a.) *Depôt Troops.*

The depôt troops comprise—

166 Depôt battalions of infantry.
31 Depôt companies of rifles.
74 Depôt battalions of reserve regiments.
74 Depôt battalions of Landwehr regiments.
93 Depôt squadrons.
37 Depôt *Abtheilungen* of field artillery.
2 Depôt companies of foot artillery.
19 Depôt companies of pioneers.
14 Depôt battalions of railway troops.
19 Depôt *Abtheilungen* of train.

with a total strength of—

7,715 Officers.
858 Medical officers.
1,377 Officials of all classes.
547,855 N.-C. Officers and men.
33,431 Horses.
450 Field guns.
760 Other carriages.

(b.) *Garrison Troops.*

The garrison troops comprise the so-called Landwehr troops, which could be mobilised in 18 Landwehr Divisions, and a body

of Landwehr foot artillery and fortress pioneers. They number in all—

305 Battalions of Landwehr infantry.
 36 Squadrons of reserve cavalry.
 18 *Abtheilungen* of Landwehr field artillery = 72 batteries.
 18 Landwehr field pioneer companies.
 54 Landwehr ammunition columns.
 36 Landwehr commissariat columns.
 18 Landwehr bearer companies.
 54 Landwehr field hospitals.
 14½ Battalions of Landwehr foot artillery.
 54 Companies of Landwehr fortress pioneers.

with a total strength of—

8,494 Officers.
 1,197 Medical officers.
 1,719 Officials of all classes.
 320,772 N.-C. Officers and men.
 52,893 Horses.
 432 Field guns.
 8,008 Other carriages.

(c.) *Landsturm Troops.*

The Landsturm would only be called out in cases of grave national danger. On its rolls are said to be over 700,000 trained men and over 3,000,000 untrained, but no approximation to the number of units it could form need be attempted.

III. SUMMARY.

Excluding the Landsturm, the total number of units in the German Army, on the war footing, would be—

1,551 Battalions } of infantry and rifles.
 31 Companies }
 573 Squadrons of cavalry.
 593 Batteries = 3,558 guns of field artillery.
 74½ Battalions of foot artillery with 1,352 siege guns,
 208 Companies of pioneers.
 37 Companies of railway troops.
 341 Ammunition columns.
 55 Divisional bridge trains.
 19 Corps bridge trains.
 25 Telegraph sections.
 287 Commissariat columns.
 94 Bearer companies.
 41 Bakery columns and detachments.
 19 Horse depôts.
 342 Field hospitals.
 19 Train depôt *Abtheilungen*.

The total strength would be—

48,122 Officers.
 7,602 Medical officers.
 12,957 Officials of all classes.
 2,165,950 N.-C. Officers and men.

 2,234,631 all ranks.
 439,759 Horses.
 3,558 Field guns.
 1,352 Siege guns.
 58,716 Other carriages

To these must be added the staffs and the *personnel* of the military establishments at home, also the railway staffs, which cannot be exactly estimated, and about 700,000 trained men of the Landsturm.

CHAPTER IV.

MILITARY SERVICE AND GENERAL RECRUITING REGULATIONS.

A. MILITARY SERVICE.

MILITARY service in the German Empire is based on the laws of 9th November 1867, 2nd May, 1874, 6th May, 1880, and 11th February, 1888, which declare that every German, with the exception of members of reigning or of former reigning houses, is liable to personal military service without the option of finding a substitute. Liability to military service lasts from the end of the 17th to the end of the 45th year of age, and this period is subdivided into those of active military service and of Landsturm service, each of which must be considered separately.

(1.) *Active Military Service.*

Active military service is subdivided into service in the standing army and its reserve, and service in the 1st and 2nd Bans of the Landwehr.

(a.) Service in the Standing Army and its Reserve.

Liability to service in the standing army and its reserve begins on the 1st January of the calendar year in which the man completes his 20th year, and lasts for seven years, counting from the actual date on which he joins his regiment, &c., which is usually in the following October, but all recruits joining between the 2nd October and 31st March are counted as having joined on the 1st October. For the first three years (with exceptions to be noted below) the men are kept with the colours of the standing army, and for the remaining four years they belong to its reserve. During the latter period they are liable to two trainings, neither of which may exceed a period of eight weeks. The reserve of the standing army is used to bring it up to war strength on mobilisation. The men of the reserve are divided into classes according to the year in which they were passed into it, and are passed into the Landwehr at the Spring Control Muster (see Chapter V)

next following the date on which they complete their seven years' service. Only those men who have joined between the 1st April and 30th September are passed into the Landwehr at the Autumn Control Muster of the year in which they complete their seven years.

(b.) Service in the 1st and 2nd Bans of the Landwehr.*

Service in the 1st Ban of the Landwehr lasts for five years, counting from the date of transfer to it from the reserve, and in the 2nd Ban of the Landwehr from the date of transfer from the 1st Ban till the 31st March of that year in which the man completes his 39th year of age, or, in the case of men who have entered the army before the completion of their 20th year, for six years. Four-year volunteers (see below) in the cavalry serve only three years in the 1st Ban of the Landwehr. The Landwehr is used in war to support the standing army, and its infantry, and, as required, its cavalry are formed into independent bodies, but the youngest classes of the Landwehr infantry, and all Landwehr men of the other arms, may be used to fill up the ranks of the units of the standing army. Men of the 1st Ban are transferred to the 2nd Ban at the spring control muster following the date on which their service in the 1st Ban expires, except those men whose service in the 1st Ban expires between 1st April and 30th September, who are so transferred at the next following autumn muster. Men of the 1st Ban, except those of the cavalry, may be called up twice during their five years for trainings of from 8 to 14 days. Those of the 2nd Ban may neither be called up for training nor summoned to Control Musters.

(2.) *Landsturm† Service.*

The duty of the Landsturm is to take part in the defence of the country, and it can be used in cases of extraordinary necessity to strengthen the Army and Navy. It consists of all males liable to service and belonging neither to the Army (including Ersatz Reserve) nor Navy from the completion of their 17th to that of their 45th year, and is divided into two Bans. To the 1st belong all Landsturm men till the 31st March of the year in which they complete their 39th year, to the 2nd Ban all others. Its men are liable to neither trainings nor control musters in peace.

The above regulations hold good in peace only; in war, all transfers from the standing army to the reserve, &c., are

* Originally "Home Defence" Force, but the term now merely means second line troops.

† General levy or *levée en masse*.

suspended. Foreigners who become naturalised German subjects are also liable to military service along with men of their own age. They may be placed in the standing army if they have not already served, but cannot be kept with the colours beyond their 31st year.

As a general rule, therefore, a German passed into the army spends three years with the colours, four years in the reserve of the active army, five years in the 1st Ban of the Landwehr, and six to seven years in the the 2nd Ban of the Landwehr, remaining in addition liable to service in the Landsturm till the completion of his 45th year. It is, however, with a fixed effective for the army, impossible to pass all the men who become liable to service through a three years' training with the colours, and this and the necessities of providing good non-commissioned officers and a reliable body of reserve Officers, of giving advantages in the way of shortened presence with the colours to men of education, and of keeping the effective strength strictly within that allowed by the budget, have caused the following modifications of the above general rules to be adopted.

1. *The Ersatz Reserve.**

This is a special body of men who do not pass through the ranks of the standing army, but who are used to fill up the ranks of its units and to form its dépôts on mobilisation. To it there are in each year transferred so many men that with seven contingents of them the whole first requirements of the standing army and its dépôts on mobilisation would be covered. To it are first posted the supernumeraries of the yearly contingent found fit for service, but not taken on account of the high numbers drawn by them, and the number is made up by—

(1.) Men fit for active service but excused for family reasons.

(2.) Men with minor bodily defects (conditionally fit), and therefore excused active military service.

(3.) Men temporarily unfit for active military service, but whose bodily defects are of such a nature that they may be expected to disappear in the course of the next few years.

Men of the Ersatz Reserve can be called up once a year for muster at the Spring Control Muster, and are liable to three trainings, the first of ten, the second of six, and the third of four weeks. The number of men to be trained in each year is fixed by the Budget, and their first training usually takes place within a year of their transfer to the Ersatz Reserve. No men who have passed their 32nd year can be called out for training unless they have been transferred to the Ersatz Reserve later than they should have been by their own fault, or have been put back to a younger class by their own fault, or at their own

* Literally "replacing reserve."

request have been excused attendance at a training. Usually the men may be called out to one training in each year only, and they are at all times subject to the same rules as other men on the furloughed lists (*i.e.*, Reserve and 1st and 2nd Bans of Landwehr).

Service in the Ersatz Reserve lasts 12 years, and counts from the 1st October of the year in which liability to active military service began. On the conclusion of this period, the men who have been trained pass to the 2nd Ban of the Landwehr, those not so trained to the 1st Ban of the Landsturm, both at the Spring Control Muster following the termination of their service in the Ersatz Reserve.

Ersatz Reserve men called up for service on mobilisation are discharged on de-mobilisation. If not previously trained in peace, they revert to the Ersatz Reserve; if previously trained, they are placed in the Reserve or Landwehr according to their age, just as if they had served with the colours in peace.

2. One-year Volunteers.

Young men of good education, who, during their period of service, engage to clothe, feed and equip themselves, and who, at the end of their period of service, pass an examination in the subjects in which they have been instructed, are permitted to be transferred to the reserve at the end of one year's service only. In each Government District is established a board composed of two officers, the civil president of the Recruiting Committee, and a number of schoolmasters, which issues certificates to young men giving them the right to serve as one-year volunteers. Applicants for those certificates must have completed their 17th year and must produce certificates of birth and of good moral conduct, and the written consent of their parents and guardians to vouch for the necessary expenditure. The board may then either accept certificates of the candidate having passed certain classes in certain schools, laid down by regulation, or it may examine him in two languages (Latin, Greek, French, or English), geography, history, mathematics, German literature, and natural sciences. Candidates who fail may try again at these examinations, which are held twice a year, in spring and autumn, but must pass before the 1st April of the year in which they complete their 20th year.

One-year volunteers do not join immediately on passing their examination. The date of their joining and the regiment in which they desire to serve are left to them to choose, with the restrictions that they must join before the 1st October of the year in which they complete their 23rd year, and that volunteers join the infantry on the 1st April or 1st October, the train on the 1st November, and all other arms on the 1st October. Volunteers joining the cavalry or horse artillery may either bring their own horses with them or may pay 20%, and

be mounted by the regiment, which is the course usually adopted. Volunteers found unfit for the service may be discharged on the proposition of their commanding officer, and those who, during their period of service, are punished by being reduced to the second class of soldiers (see Chapter VIII, Part II) thereby render themselves liable to serve their full period of three years in the ranks. If a regiment changes its garrison, its one-year volunteers may, if they desire it, be transferred to the relieving regiment. Medical students who are one-year volunteers may serve six months in the ranks and six as assistant-surgeons. Volunteers are invariably supernumerary to the establishment, and their number is unlimited except by the regulation that field artillery and train stationed in a garrison in which there are also infantry are only bound to receive four one-year volunteers per battery or company.

3. *Three- and four-year Volunteers.*

Men who have completed their 17th year and who desire to make the army their profession, or who have reasons for desiring to complete their service at an early age, are permitted to volunteer for a period of three or four years. They must report themselves to the Civil President of the Recruiting Committee, and receive from him permission to volunteer. The choice of a regiment is left to them, but their acceptance by its commanding officer is dependent on there being vacancies in it and on their passing a medical examination. If there are no vacancies, the volunteers may still be accepted and sent to their homes till such occur. The Under-Officers' Schools (see Chapter III, Part II) are recruited entirely from such volunteers, as is also the entire body of under-officers of the army. Large numbers of four-year volunteers serve in the cavalry.

4. *Men on Furlough at the Disposal of their Regiments.*

The necessity for sending a certain number of the older soldiers on furlough arises from the establishment of each battalion, &c., being fixed and there being no power of exceeding this establishment. A battalion of Prussian infantry on the normal establishment has about 500 non-reengaged men, and, as it incorporates 200 recruits per annum, if all were retained the battalion would be 600 strong. After completing two years' service, therefore, men may be sent on furlough "at the disposal" of their regiments, and are so retained until their legal term of three years' service expires. In selecting the men to whom this privilege is granted, their age, private circumstances, behaviour, and proficiency in their duties are to be taken into consideration, but men are not permitted to be sent on furlough on purpose to make room for volunteers. They may at any time be recalled. One of the first principles of German military administration is that every body

of troops shall at all times be up to its full establishment, and with this view any vacancy (which cannot be filled up by a volunteer) occurring before the 1st February is filled up by calling in the first man on the list of the recruits of the previous October's contingent who has not been taken for service, and any vacancy after that date is filled by recalling a furlough-man from leave. As a rule only the infantry and foot artillery send men away on furlough. The usual (not official) name for these men is *Königs Urlauber* (King's furlough-men).

5. Other Special Periods of Service.

(a.) Schoolmasters and candidates for those posts serve six months only in an infantry regiment and are then sent to the reserve.

(b.) A certain proportion of the men of the train battalions are sent to the reserve after six months' active service.

(c.) Sick attendants (*Krankenwärter*) are sent to the reserve after two years' service.

(d.) Students of the Frederick-William Medico-Chirurgical Institute have to serve in the army two years for every year passed in that institution. (See Chapter III, Part II.)

(e.) Former pupils of the Under-Officers' Schools (see Chapter III, Part II) have to serve for four years with the colours, and those of the Under-Officers' Preparatory Schools and of the Military Orphanage two years in addition for each year passed in those schools.

(f.) Men of the cavalry who voluntarily serve for four years with the standards have their service in the 1st Ban of the Landwehr reduced to three years.

B. GENERAL RECRUITING REGULATIONS.

The territorial organisation of the Empire referred to in the following pages is indicated in Chapter V.

The various authorities under whose orders recruiting is carried on are divided into—

(a.) The ministerial or supreme authorities.

(b.) 3rd grade authorities.

(c.) 2nd grade authorities (Superior Recruiting Committees).

(d.) 1st grade authorities (Recruiting Committees).

The ministerial authorities are: in Prussia, Bavaria, Württemberg, or Saxony, the War Minister, or corresponding Ministers in the other federated States of the Empire, and these exercise the supreme direction of recruiting. The 3rd grade authorities are the General Officers Commanding Army Corps or the 25th (Grand Ducal Hessian) Division, and the Chief Civil Official of the Province or special officials detailed by the minor States, and these conjointly superintend recruiting in their own districts. The 2nd grade authorities are the Superior Recruit-

ing Committees (*Ober Ersatz Commissionen*) established in each Infantry Brigade District and named after it.* Each consists of an officer of rank, usually the Brigade Commander, and a superior civil official, and these have charge of recruiting in their district. The 1st grade authorities are the Recruiting Committees (*Ersatz Commissionen*) established in each of the recruiting circles into which a Landwehr Battalion District is divided, which consist of the Landwehr Battalion District Commander, and of a civil official for each recruiting circle. To the Superior Recruiting Committees may be attached one military and four civilian extra members, and to the Recruiting Committees one civilian member for special duties, such as decisions on liberations from and postponements of service, classification of reserve men, &c., in which case each member has an equal voice, decisions being given by a majority of votes. The Superior Recruiting Committees confirm or revise the decisions of the Recruiting Committees. Each Recruiting Committee has a medical officer appointed to it, but he has no vote, his duties being merely connected with the physical eligibility of those liable to military service. The subordinate staff consists of a clerk, the Landwehr company district sergeant-major (each for his own district), and three non-commissioned officers belonging to the Landwehr district staff. In the case of the Superior Recruiting Committees, a field officer of the Guards is added as a member, whose duty is to look after the recruiting for the Guard Corps, and who has a vote. In addition, a medical officer, the infantry brigade adjutant, a captain of Landwehr, the sergeant-major of the company district concerned, and three clerks are attached.

The yearly work of the Recruiting Committees is divided into the preparatory period, the mustering period, and the levying period, each of which must be considered separately.

(a.) *The Preparatory Period.*

Every person liable to military service is bound to report himself to the authorities of the place of his residence, or of his birthplace if he does not live within the Empire, between the 15th January and 1st February of the year in which he completes his 20th year of age. Failure to do this is punished with a fine up to 30 marks (30s.) or imprisonment up to three days, or the person may be prevented from drawing lots. He is then bound to appear twice a year, if called upon, before the recruiting authorities, until a final decision as to his disposal is arrived at. Men are not allowed to emigrate between their 17th and 25th years without permission from the recruiting authorities.

Clergymen, or those in charge of registers of births, have to send in to the recruiting authorities before the 15th January of

* There are two such in the 11th Brigade, one for the 1st and 2nd Berlin and the Teltow Districts, the other for the remainder of the Brigade.

each year, an extract from their register showing the births of the past year, and those men are inscribed on the recruiting register (*Rekrutierungs-Stamm-Rolle*) of the parish as they come of age for military service. In addition to those duly registered, the following persons of the male sex, on reaching the lawful age, must also be brought on the register:—

(a.) Those who have acquired their lawful domicile in the place.

(b.) Those who, without being born in the place and without having a domicile of their own, are living as servants, clerks, apprentices, journeymen, workmen, students, &c.

(c.) Those who are born in the parish but live abroad and have no domicile in the German Empire.

On the personal reports, checked by the registers of births, the parish authorities, under the supervision of the Civil President of the Recruiting Circle, draw up the recruiting registers, giving all necessary particulars of each man. All the men becoming liable to service in each year are placed upon one roll in alphabetical order, and on the 15th February these rolls are sent to the Civil President of the Recruiting Circle. On them are based the whole work of these committees. Lists are also made (*Restanten-Listen*) of all men who for some reason or other have not been taken for military service after they have been three years liable to it, which lists are used for purposes mentioned below. The *Stamm-Rollen* are preserved till the men have passed their 39th year, the *Restanten-Listen* till they have completed their 45th year.

Before the 15th March, each Landwehr Battalion District Commander notifies to the civil members of the Recruiting Committee of each circle the plan for his mustering journey, and the parish authorities order their men to appear at the time and place fixed. All men on whom no final decision has been passed are bound to appear on those occasions.

(b.) *The Mustering Period.*

The preliminary musters are held by the Recruiting Committees, the Landwehr District Commander being accompanied by his adjutant. Only 200 men may be mustered on any one day, and Sundays, holidays, or election days are avoided as far as possible. The men may not be kept longer than one day from their civil employment. Each man is medically inspected and measured before the committee, and is asked whether he has any claims to exemption or postponement of service. Each man's case is considered, and the decisions are classed as temporary or final, the former class of decisions merely putting off the time at which a man has to draw lots for service. Service may be postponed for four classes of reasons, viz.:—

(a.) Temporary reasons for exclusion (men in prison or undergoing trial). A final decision must be come to on

these cases before the end of the fourth or fifth years of liability, according to circumstances.

- (b.) Temporary unfitness (too small or too weak). A final decision must be arrived at in the third year of liability.
- (c.) Consideration of private circumstances, such as—

- (1.) The only son of destitute families, &c.

- (2.) The son of a landowner, farmer, or proprietor of a factory unable to superintend his property, if the services of such son are indispensable to him.

- (3.) The next eldest brother of one who has been killed in war or died of wounds, or of one who has lost his health on service, if by such postponement the lot of the latter is ameliorated.

- (4.) Farmers of hereditary land whose existence depends on their land, and who have no person who could look after it for them.

- (5.) Owners of mills, &c., employing several workmen, if they have succeeded to the ownership before the year preceding the muster.

- (6.) Those engaged in studies of art or a profession, whose career would suffer damage if such studies were interrupted.

- (7.) Men permanently domiciled abroad.

Marriage is no cause for postponement of service. In the third year of the liability of all men whose service has been postponed as above, a final decision must be come to, and, if postponement is still advisable, they are passed to the 1st Ban of the Landsturm.

- (d.) Postponement as a supernumerary. When the contingent required for the Army and Ersatz Reserve has been made up, the remainder of the men fit for service are put back till next year. In their case, too, a decision must be arrived at by the 1st February of the third year.

The decisions in cases *a*, *b*, and *c* are generally given by the Recruiting Committees, those in *d* by the Superior Recruiting Committees. On mobilisation, all postponements of service are at once cancelled.

Final decisions are given by the Superior Recruiting Committees, and from them there is appeal to the higher authorities. Such decisions are given at once on—

Exclusion of men who have been condemned to penal servitude.

Striking off the rolls of men unfit bodily or mentally for the service.

Transfer to the 1st Ban of the Landsturm of those conditionally fit.

Fitness for active service.

After the whole of the men of the recruiting circle who have been brought before the committee have been mustered, the following are struck out, viz. :—

- Men entitled to serve as one-year volunteers;
- Men who have volunteered for three or four years;
- Men who have not reported themselves punctually, and who therefore are deprived of the privilege of drawing lots by the Superior Recruiting Committee (*Vorweg Einzustellende*);
- The physically unfit;
- The morally or mentally unfit.

The remainder of the men are then arranged in three lists, as follows:—

- (a.) The men of former contingents who have drawn lower numbers than the "final number" (see below) (*Vorzumerkende*).
- (b.) The men of the current annual contingent.
- (c.) Supernumeraries of former contingents.

Lots are then drawn, and those obtaining the lowest numbers form the contingent for the Army, together with the "*Vorweg Einzustellende*," mentioned above. The total of the contingent is made superior to the actual requirements to provide for casualties, and the highest number in this total is called the "final number" (*Abschluss-Nummer*). Men with numbers above those of the actual contingent required for the Army, and up to the final number, are kept at the disposal of the recruiting authorities to fill up vacancies, and those not so taken form the *Vorzumerkende* for next year. Those who draw numbers above the final number are placed in the Ersatz Reserve, and if there are more of this category than are required, they draw lots among themselves.

The procedure of lot-drawing is that each man's name is called out from the alphabetical list in order, and that he or his representative draws a number, which is then entered against his name. The men who have drawn numbers placing them in the annual contingent are henceforth at the disposal of the military authorities as recruits on the furlough establishment, and are under the order of the Landwehr District Commanders.

At the conclusion of the work in each recruiting circle, the final lists (*Vorstellungs-Listen*) are drawn up by the Recruiting Committees as follows:—

- List A. The men excluded from military service.
- List B. (a.) Men unfit on account of mental weakness.
(b.) Men unfit on account of bodily defects.
- List C. The men proposed to be transferred to the 1st Ban of the Landsturm on account of—

- (a.) Temporary unfitness.
- (b.) Conditional fitness.
- (c.) Private circumstances.
- (d.) As supernumeraries.

List D. The men proposed to be transferred to the Ersatz Reserve:—

- (a.) As supernumeraries.
- (b.) On account of private circumstances.
- (c.) On account of minor bodily defects.
- (d.) On account of temporary unfitness.

List E. The men proposed for the annual contingent.

List F. The men of the sea-faring population. (See Chapter XXIII.)

Lists are also made out of the men left at the disposal of the authorities on whose case no decision has yet been passed, of the recruits temporarily on furlough, and of the one-year volunteers.

(c.) *The Levying Period.*

In this period the Infantry Brigade Commander, with the other members of the Superior Recruiting Committee, makes the round of his district, and inspects the men of the contingent at the various centres in batches of not more than 300 at a time, with the same restrictions as to days and detention of the men as in the case of the Recruiting Committees. These journeys must take place before the period at which the Ersatz Reserve are called out for training, and must also not interfere with the Brigade Commanders attending the drills of their own Brigades. The Landwehr Battalion District Commanders and the civil members of the Recruiting Committees attend in their own circles. The business of the Superior Recruiting Committee is to decide on the fitness of the men for service, on cases of appeal, on the distribution of the contingent to various arms and regiments, as appointed for the district, and the choice of the men of the Ersatz Reserve to be trained.

The bases on which it works are the Final Lists prepared by the Recruiting Committees as above. Only the men whose names are down in Lists C (c), D, and E, are required to present themselves before the Committee. The men are then detailed to the regiments to which the district has to furnish its contingent, any deficiencies being made up from the surplus recruits at the disposal of the Committee from various causes. Only in the case of Guards, Cuirassiers, Foot Artillery, Pioneers, railway troops, and workmen is it allowable to furnish a smaller number of men than laid down, on account of the special conditions insisted on for those corps, in which case the deficiency in one district would be made good from another. The men who, in their third year of liability, are still supernumerary, are transferred to the Ersatz Reserve on the following 1st February,

and are all designated for training. All the men of the Ersatz Reserve chosen for training have the day on which their first training begins notified to them before the 15th July of their first year of service. On the termination of the work, the Brigade Commander forwards to the Army Corps Commander a report on his proceedings, and on the final distribution of his recruits. As already stated, all casualties in the troops which occur up to the 1st February of each year are filled up by men (termed the *Nach-Ersatz*), who have not been required for the contingent, but have drawn numbers below the final number, the casualty being made good by the circle which has supplied the recruits of the year. The whole proceedings must be terminated and the results forwarded to the War Ministry by the 1st May of each year.

(d.) *Recruiting in Time of War.*

On mobilisation, acting commanders are appointed to Army Corps and Brigade Districts. Recruits are raised as in peace by the Recruiting Committees, but the mustering and levying periods are merged into one, and all operations pushed on with the greatest haste. The Recruiting Committees also muster and medically inspect the men passed to the 1st Ban of the Landsturm, and take them for service if physically fit. Volunteers may at any time be taken for the regulation periods or for the duration of the war.

(e.) *Determination of Fitness of Men for Service.*

All the men presenting themselves before the Recruiting Committees are medically inspected by the military surgeon attached, who advises the Committee. They are divided into the following classes:—

- (a.) Fit for the service.
- (b.) Conditionally fit.
- (c.) Temporarily unfit.
- (d.) Permanently unfit.

The men of class *a* are again subdivided into—

- (1.) Those fit for service in the ranks (*mit der Waffe*).
- (2.) Those fit for service without arms (as hospital attendants or tradesmen).

The conditions of height are:—

	Maximum.		Minimum.	
	ft.	in.	ft.	in.
Prussian Guards of all arms, except Dragoons and Hussars, and Bavarian Body Guard ..	..	..	5	6·67
Dragoons and Hussars of the Guard ..	..	..	5	4·72
Line Infantry .. .. .	..	..	5	1·6
Rifles	5	8·62	5	1·6
Cuirassiers, Heavy Cavalry, and Lancers..	5	8·62	5	5·5
Dragoons, Hussars, and Bavarian Light Horse ..	5	7·55	5	1·6
Horse Artillery	5	8·62	5	3·55
Field Artillery .. .. .	..	..	5	3·55
Foot Artillery .. .. .	..	..	5	5·5
Pioneers and Railway Troops .. .. .	..	..	5	3·55
Train	5	8·62	5	1·6

Of the recruits for the Guards, with the exception of those for the light cavalry, one half must be 5 feet 8·62 inches in height, and for them the finest, strongest, and best conducted men are chosen. The line infantry and rifles receive men who seem best fitted to stand the fatigue of marching, the rifles receiving all the men connected with or preparing to join the forest department, gamekeepers, professional hunters, &c. The cavalry, horse artillery, and train receive muscular men accustomed to the care of horses, and who are not too heavy. As a rule, for the heavy cavalry, except for the Gardes du Corps, the weight of a recruit should not exceed 153 lbs., and for the light cavalry, 142 lbs., with an extra allowance of about 6 lbs. for the Guards. Men for the artillery must be powerfully made, and those for the pioneers and railway troops must be accustomed to field labour, or acquainted with a trade useful in those branches.

No special height is laid down for men passed fit for service without arms. Those taken for hospital attendants must have a natural turn for hospital work, and those taken as tradesmen must be tailors, shoemakers, or saddlers.

Men classed under (b) as conditionally fit are those who are below the regulation height, or who have permanent malformations or maladies which do not interfere with their health but limit the field of their military usefulness. Such men with less serious faults are passed into the Ersatz Reserve, the remainder into the 1st Ban of the Landsturm.

Men classed as temporarily unfit are those whose physical development is generally imperfect, or who are suffering from the effects of illnesses, or from illnesses which would take a long time to cure or which have become chronic. Such men are put back for a year.

Lastly, the men considered permanently unfit are those who suffer from important incurable maladies, or who have lost such members as prevent the free movement of the body or the manipulation of arms. Such are at once struck off the lists.

CHAPTER V.

TERRITORIAL AND LANDWEHR ORGANISATION AND SPECIAL RECRUITING REGULATIONS.

A. TERRITORIAL AND LANDWEHR ORGANISATION.

ON the territorial organisation of the Empire is based the entire recruiting system, and on the territorial authorities is laid all the responsibility for the details of all arrangements for calling out the men of the reserve and Landwehr on mobilisation, in fact of insuring, in a great measure, the preparedness for war of the army. Two successive great campaigns, both preceded by general mobilisations, have proved the excellence of the arrangements adopted in Prussia, and later in Germany, for the rapid augmentation of the army to a war footing and for the formation of second line troops, and therefore the organisation of the German territorial system is a study which will well repay close attention.

The territory of the Empire is divided into 17 Army Corps Districts and 1 Divisional District for the 25th (Grand Ducal Hessian) Division, each of which is under the direct command of the officer commanding the Army Corps or Division, and forms a special recruiting district. Thus the officers commanding Army Corps or the 25th Division are at the same time commanders of the active troops and superintendents of the recruiting and mobilisation arrangements in their territorial district, and when they take the field other officers are appointed to act for them. Each of the above districts is divided into a certain number of brigade districts,* superintended in the same manner by the officers commanding the infantry brigades bearing the corresponding numbers, and these again into Landwehr Battalion Districts, at the head of which are placed half-pay officers of the active army (*Offiziere zur Disposition*). The Landwehr Battalion Districts have a double sub-division, viz., into recruiting circles, corresponding more or less to the civil sub-districts, for purposes of recruiting, and into company districts, for purposes of mobilisation and control of men of the reserve and Landwehr. The details of the territorial distribution of the Empire will be found in Appendix II. It will be remarked that, in matters of territorial organisation, there is no authority between the Brigade Commanders and those of the Army Corps (or 25th Division), and in fact the Divisional Commanders have nothing to do with the Landwehr Districts except to superintend the training of the reserve and Landwehr men when called out, to arrange for the

* Certain Landwehr Districts are placed directly under the Landwehr Inspectors (see Chapter XVIII), who correspond in this case to the Brigade Commanders.

mobilisation of their division, and to settle affairs of discipline among the officers and men of the furloughed lists.

Normally, each Army Corps District is divided into 4 brigade districts; exceptionally the 12th (Royal Saxon) Army Corps District is divided into 5 brigade districts. The 25th Division District has 2 brigade districts. Normally, again, each brigade district is divided into 4 or 5 battalion districts, but to this rule there are numerous exceptions, as will be seen from Appendix II, some brigade districts having only 2, others 6 Landwehr Battalion Districts. The 1st Breslau and Cologne Districts are so thickly populated that they have been formed into Landwehr regimental districts of 2 battalions each, while the capital, Berlin, is divided into two regimental districts, the 1st Berlin comprising all the *personnel* of the cavalry, artillery, engineers, train, and medical corps residing in the district, while the 2nd Berlin comprises all the *personnel* belonging to the infantry, and is divided into 4 battalions. A similar distribution of duties exists in the 1st and 2nd Leipzig districts.

Till 11th February, 1888, the Landwehr Districts bore the names and numbers of corresponding line infantry regiments, but as in many cases the corresponding line regiments were not stationed within the brigade district, this nomenclature was abolished.

Each Landwehr Battalion District is sub-divided into a number of company districts, generally 4, but varying from 3 to 7.

The following table shows the number of brigade and battalion districts in each Army Corps:—

	Brigade Districts.	Battalion Districts.
1st Army Corps	4	17
2nd " 	4	17
3rd " 	4	20*
4th " 	4	19
6th " 	4	17
8th " 	4	18†
7th " 	4	17
8th " 	4	18†
9th " 	4	13
10th " 	4	13
11th " 	4	17
25th Division	2	7
12th Army Corps	5	19
13th " 	4	17
14th " 	4	10
15th " 	4	11
1st Bavarian Army Corps	4	16
2nd " " 	4	16
Totals	71	282

* Counting the 1st and 2nd Berlin for four battalions.

† Counting the 1st Breslau and Cologne for two battalions each.

Although there are shown in the above table 282 battalion districts, there are in reality only 277, as the 1st and 2nd Berlin, 1st Breslau, and Cologne are not divided locally into battalions, but the men are only so borne for distribution of office work and facilities of mobilisation.

The Prussian Guard is recruited from the whole of Prussia and from Alsace and Lorraine, and has no territorial districts. Nominally, the battalions have territorial names as follows:—

1st Guard Landwehr Regiment	..	..	{ 1st Battalion (Königsberg).
			{ 2nd " (Graudenz).
2nd " " "	..	..	{ 1st " (Berlin).
			{ 2nd " (Stettin).
3rd " " "	..	..	{ 1st " (Hanover).
			{ 2nd " (Schleswig).
4th " " "	..	..	{ 1st " (Magdeburg).
			{ 2nd " (Cottbus).
Guard Fusilier Landwehr Regiment	..	..	{ 1st " (Frankfurt-on-the Main).
			{ 2nd " (Wiesbaden).
1st Guard Grenadier Landwehr Regiment	.	.	{ 1st " (Görlitz).
			{ 2nd " (Lissa).
2nd " " "	..	..	{ 1st " (Hamm).
			{ 2nd " (Cassel).
3rd " " "	..	..	{ 1st " (Breslau).
			{ 2nd " (Liegnitz).
4th " " "	..	..	{ 1st " (Coblenz).
			{ 2nd " (Düsseldorf).

These are, however, mere names, and in none of the places mentioned above are there any officials who have special duties in connection with reserve or Landwehr men of the Guard, the rolls of these being kept by the ordinary district authorities as will be mentioned below. Each Guard regiment, with the exception of the Guard Fusiliers, has a sergeant-major and three sergeants extra to the establishment, who keep the rolls of the Landwehr men of their regiment.

Passing now to the particular organisation of the battalion districts, each has, normally—

- 1 Half-pay field officer, District Commander.
- 1 First or Second Lieutenant, detached generally from a line regiment of the brigade, District Adjutant.
- 3 to 7 Sergeant-majors, 1 to each Landwehr Company District.
- 2 Sergeants (1 clerk, 1 quartermaster-sergeant).
- 2 Under-officers.
- 4 Lance-corporals.
- 4 Privates (1 a shoemaker and 1 a tailor).
- Total: 2 Officers and 15 to 19 men.

To the above there are the following exceptions:—

The 1st and 2nd Berlin Landwehr Regiments have each a field officer commanding, 2 other field officers, an adjutant, 2 officers of the active army attached for duty, a surgeon, an assistant surgeon, and a paymaster, with together about 90 non-commissioned officers and rank and file.

The Breslau and Cologne Landwehr Regimental Districts, and the Hamburg, 1st Dresden, and Munich Landwehr Battalion Districts have each 2 extra pensioned officers. The Frankfurt, 1st Leipzig, Stuttgart, and Nürnberg Landwehr Battalion Districts have each 1 extra pensioned officer. The duties of these officers are to superintend offices at which men of the furloughed lists may report themselves, and to hold control musters. They are of the rank of captain or lieutenant.

The Breslau, Cologne, Hamburg, and Dresden districts mentioned above have an aspirant paymaster.

The number of non-commissioned officers and men varies also with the importance of the district.

The total strength of the permanent cadre (exclusive of adjutants) is therefore :—

Landwehr District.			N.-C. Officers and Men.				Medical Officers.	Paymasters.	Officers' Horses.
			Officers.	N.-C. Officers.	Aspirant Paymasters.	Lance-Corporals and Privates.	Total.		
Prussia, &c.,	209 districts ..	226	1,955	3	1,782	3,740	4	2	4
Saxony	19 " ..	23	170	1	116	287	..	..	..
Württemberg	17 " ..	18	151	..	140	294	..	..	..
Bavaria	32 " ..	49*	307	..	237	544	..	..	..
Total ..	277 "	316	2,583	4	2,275	4,862	4	2	4

* Including several officers serving under former regulations.

The above form the entire permanent cadres of the Landwehr districts, but to these figures must be added 278 Adjutants detached from their regiments, who, however, are not seconded in their regiments.

In addition to the above active cadre, there is appointed for each company district a "District Officer" (*Bezirks-Offizier*), who is selected from the captains or senior first lieutenants of Landwehr of the Battalion District, who have passed the tests as Landwehr Company Commanders. He must live in the company district, and is nominally in charge of it, but in reality his duties are confined to holding musters and commanding the men when called out, the responsibility for the correct keeping of the rolls being laid on the district sergeant-major. These officers are unpaid, but receive an allowance of 1*l.* 10*s.* per month to cover their travelling expenses. They would command their companies on mobilisation.

The Commanders of Landwehr Battalion Districts are chosen from half-pay or pensioned officers of the active army, who, for family or personal reasons, find it convenient to retire from

active service, but who are still capable of performing the less active duties of territorial commanders. Their usual age on appointment is from 40 to 45 years. In addition to the control and recruiting operations, they have charge of the payment of invalids, and superintend generally the preparations for mobilisation in their districts. They, as indeed all the active cadre of the district, wear the uniform of the infantry of the brigade to which their district belongs, with the brigade number on the shoulderstraps (see Chapter XVI), and are obliged to live at the district headquarters. They are presidents of the council of honour of their district, and have the disciplinary powers of a regimental commander. In no case does the Landwehr District Commander take command of any battalion of Landwehr furnished by his district. His functions are purely administrative, and the command of any body of Landwehr troops is entrusted to officers of the line or Landwehr specially selected and appointed in the plan of mobilisation.

The District Adjutant is a first or second lieutenant, generally of a regiment of infantry belonging to the brigade, appointed for a period of two to three years, and not seconded in his regiment. He is the staff officer of the district, superintends generally the office work, and has personal charge of the registers of officers in the district. He keeps the key of the secret presses in which all papers relating to the operations of mobilisation are kept. He has the powers of a company commander over the permanent cadre, and superintends their drill (at least once a week), and their musketry instruction. He has to inspect the clothing and equipment store several times a year. In case of the absence of the Battalion District Commander, the adjutant takes his place. Before being appointed adjutant, officers serve a few weeks in a district office. The extra officers attached to various battalions assist the commander and adjutant.

The subordinate *personnel* is recruited from men transferred from the line regiments of the brigade, demi-invalids, re-engaged men, or three-year volunteers.

The company sergeant-majors reside at the headquarters of their company, keep the rolls, and attend at musters, as will be noticed farther on. They are appointed by the Brigade Commander on the proposal of the Battalion District Commander.

The sergeants and under-officers are appointed by the Battalion District Commander, and each has charge of one of the four sections into which the district office is divided, viz. :—

- (1.) Officers, invalids, and general correspondence.
- (2.) Recruiting.
- (3.) Furloughed lists and men of Ersatz Reserve.
- (4.) Pay, clothing, and equipment.

One of the sergeants, that in charge of Section 4, has also charge of the battalion clothing and equipment store. The importance of this store varies greatly with the district according

to the plan of mobilisation. It may contain complete clothing, arms, and equipment for all the formations laid down for the district. On the other hand, these formations may be mobilised by corresponding units of the active army, and in this case the store merely contains clothing for 400 men. In any case, its supplies are renewed by the regiment of infantry corresponding to the district as explained in Chapter VII, Part II. The Battalion Commander is responsible for the security of this store, and may, if necessary, call out men of the furloughed lists to furnish a guard over it.

The lance-corporals assist in the four sections, and of the privates two are officers' servants, and two are orderlies, who also serve as fatigue men in the store.

In times of extraordinary pressure of work, extra clerks may be told off from the line regiments by the Brigade Commander to assist in the district offices.

B. DUTIES OF THE LANDWEHR DISTRICTS IN PEACE.

In peace one of the principal duties of the Landwehr District Staffs is to keep the lists of the furloughed *personnel*, both officers and men. There are four principal lists :—

- (a.) Officers' lists (*Ranglisten*).
- (b.) Landwehr lists (*Landwehr Stamm-Rollen*).
- (c.) Ersatz Reserve lists (*Ersatz-Reserve-Rollen*).
- (d.) Control lists (*Kontrollisten*).
- (e.) Auxiliary lists (*Hülfslisten*).

(a.) The *Officers' lists* are kept in the battalion district office, and contain the names of all Reserve and Landwehr officers domiciled in the district, arranged by arms, distinguishing those of the Guard and also those of the Reserve and Landwehr of each arm. These are drawn up upon the officer's record of service, one copy of which is kept in the Landwehr district office, the other being in the keeping of the Chief of the Military Cabinet. Copies of these lists are sent to Army Headquarters once a year on the 1st May, a second copy being forwarded to the Army Corps Commander, and on the 5th of each month casualty returns are sent for those lists to the Army Corps Commander and to Army Headquarters, through the brigade and divisional authorities, and also to the infantry regiments, cavalry brigades, &c., &c., as regards their own reserve and Landwehr officers.

(b.) The *Landwehr lists* are kept, one copy (for the whole battalion) in the battalion office, and one copy (for the company only) in each company office. Each contains alphabetical lists of all the men of the reserve and Landwehr, and of men on furlough at the disposal of their regiments, residing in the district, arranged by yearly contingents, *i.e.*, by batches of all the men who have been transferred to the furloughed establishment between the 1st April of each year, and the following

31st March. The various arms and the guard are kept separate, and it is further noted against each man what rank or duties (such as gunner or driver in the artillery, cuirassier, lancer, hussar, dragoon, artificer, hospital assistant, &c.) he formerly held or fulfilled. Once a month, casualties are notified by the company sergeant-major to the battalion office, so that the lists in that office may be corrected, and once a year he brings all his lists to the battalion office for inspection, as is also the case with the other lists mentioned below. These lists may be destroyed when the men have reached 45 years of age or cease to be liable to military service.

(c.) The *Ersatz Reserve* lists are rolls of that particular category of furloughed men, kept in the same manner as the Landwehr lists, casualties, &c., being similarly notified. No separate classification is required for cavalry, as no *Ersatz Reservist* serves in that arm.

(d.) The *Control lists* comprise rolls of—

- (1.) The recruits on furlough or at their homes.
- (2.) The volunteers on furlough or at their homes.
- (3.) The men liable to military service, on whose case no decision has been passed by the military authorities.

These lists are closed and corrected every 15th June and 15th November.

(e.) The *Auxiliary lists* are those on which the mobilisation orders are issued, and are extracts from the others. There are five separate lists as follows:—

A. The men on the Landwehr or *Ersatz Reserve* lists liable to be called up for service. They are classed by localities or itineraries so that all the men on one list may be summoned in one tour. Against each man's name is placed:—"Detailed for the . . . ; will report himself at . . . on the . . . day of mobilisation at . . . o'clock; is entitled to marching money."

B. The furlough men of the railway regiment, civil railway *personnel*, and all railway employes dispensed from service in peace.

C. Men placed behind the last class of the reserve in order of convocation, e.g., railway signalmen, pointmen, &c., whose presence at their duties is necessary for the mobilisation and concentration of the army.

D. Men placed behind the last class of the Landwehr or *Ersatz Reserve* in order of convocation, such as only supports of families, large proprietors of works, &c., who are over 30 years of age, and who cannot be replaced, &c.

E. Men not on other rolls.

The latter are transferred to other lists as occasion offers, but no man can be on two lists at one time.

A record of service is kept for each man by the sergeant-major of his company district, and if he changes his domicile, this is transferred with him.

In order to keep the military authorities constantly aware of the number of officers and men available in the event of mobilisation, the Landwehr, Ersatz Reserve, and control lists are closed up every 15th June and 15th November, and returns are sent in duplicate to the Brigade Commander, who forwards one to the Army Corps Commander, and returns of officers are furnished as detailed above. Returns of their reserve and Landwehr men are also sent direct to the Guard Corps and the railway regiment. These returns have all to be collated, and have to reach the War Ministry by the 10th July and 10th December respectively. From the returns furnished to brigades, the Brigade Commanders inform the various regiments of the Army Corps of the number of their furloughed establishment.

To check the various rolls and to ascertain that the men are actually present, control-musters are held of the 1st Ban of the Landwehr and Ersatz Reserve men once a year, and of other men on the furloughed establishment once in every six months. These are held in April and November, the Landwehr and Ersatz Reserve men being summoned to the April muster, and the hour and place are to be so chosen that the men are not kept more than one day from their civil occupations. Election days are to be avoided. Attendance at a control muster gives no right to marching money, and each man has to bring his pass with him. Men residing abroad, those employed in navigation, and 1st Ban of the Landwehr men who are to be transferred in autumn to the 2nd Ban are exempted from attendance. Otherwise, absence can be punished by a fine up to 3*l*. or imprisonment up to eight days in a military prison.

The musters are held by the Landwehr Company District Commander or by a senior lieutenant of the line, assisted by the district sergeant-major. Not more than 300 men may be mustered at one time, and it is from the "Auxiliary Lists" that the names are called out. After the names have been called out, any changes which have taken place in the military or civil situation of the men are noted, and any regulations or orders that are of importance are read out. Notice is always given also that in the event of mobilisation, the usual service of railway trains will be modified. Officers and (of course) the sergeant-major attending these musters wear uniform, but other ranks appear in plain clothes. Sticks, umbrellas, &c., are laid aside, and the proceedings are conducted in a strictly military manner.

C. DUTIES OF THE LANDWEHR DISTRICTS ON MOBILISATION.

The reserve, Landwehr, Ersatz Reserve, and Landsturm are called out by order of the Emperor, but in the case of a portion of the Empire being declared in a state of war the men can be called out by Army Corps Commanders. The youngest classes are always called out first. The men are summoned by the Landwehr District Commanders on the bases of the Auxiliary

Lists A and B, except in the case of men in the service of railway companies, who may be called up by order of the chief of the General Staff, and in that of men employed in military establishments, whose names may have been notified to the District Commanders as being indispensable in these establishments in case of mobilisation. There are two ways in which the men may be called out, by individual notices or by public announcement. The latter is the usual manner, and orders are made out in peace for each locality, ready to be filled in with dates, &c., and notifying the classes, arms, and categories of the men who have to report themselves at certain places on certain days and at certain hours. Individual orders are also made out in peace, but are only issued to men who have to present themselves on the first day of mobilisation to take up certain duties. The men on Auxiliary List C are called up simultaneously with those of the youngest class of the Landwehr, and for those on List D special orders are issued by the War Minister. A number of men greater than that laid down in orders must always be called out to allow for casualties, and this excess is fixed at 5 to 10 per cent. for men of the reserve, and 10 to 15 per cent. for those of the Landwehr. All men who are not called in direct to their regiment are formed in detachments at the headquarters of the Landwehr Battalion District, and are thence despatched to the unit to which they have been told off.

In peace, all preparations are made for the proper carrying out of the mobilisation in the most minute detail, and the District Commander, assisted by his adjutant, is personally responsible for the correct and careful execution of the details of the "plan of mobilisation." This "plan of mobilisation" is prepared by the Great General Staff for the whole army, and in conformity with it Army Corps Commanders issue to the Landwehr District Commanders every year instructions showing what measures they have to take in the event of mobilisation. In accordance with these, each District Commander causes his mobilisation diary (*Mobilmachungs-Termin-Kalender*) to be drawn up, in which is laid down the exact sequence of work to be performed on each day after mobilisation is ordered. On the careful compilation of this diary depends the success of the whole operation, and it must be so clearly drawn up that any one taking over charge of a District Office may at once be able to grasp all the measures proposed to be taken by his predecessor. It is prepared by the District Adjutant himself, and for this purpose he must study with the greatest care all the regulations in the general plan of mobilisation and the special orders of the Army Corps Commander. The detachments of men who have to be sent to the various regiments are shown at the same time in the mobilisation diary and in the transport plan, and these are detailed according to the last returns of the furlough lists and the distribution ordered by the Army Corps Commander. All other documents concerning the mobilisation, such as the routes for the men sent to notify the calling up of the furlough men,

instructions for the civil authorities, extracts from the lists to be sent with the men to their regiments, instructions for commanders of detachments, routes for those detachments, &c., have also to be prepared by the Adjutant in peace, so as to save time and clerical labour on mobilisation. Men are also told off beforehand to join the District Offices at once as extra clerks, and buildings are selected and arranged for as extra offices. All the measures taken are kept absolutely secret, the District Commander and the Adjutant alone being acquainted with them, and all documents connected therewith are kept under lock and key.

On mobilisation appearing imminent, the district sergeant-majors are warned to hold themselves in readiness to come in at once to battalion headquarters, and all the documents are finally looked over to ascertain that nothing has been omitted. On the telegraphic orders being received, telegrams or mounted orderlies are at once despatched to company headquarters, and to all the civil authorities of the district, and the orders calling out the men are at once despatched as has been previously arranged. All the extra clerks are called in, the extra offices are occupied, and the work is divided among the the sergeant-majors, each superintending the work for his own company under the general direction of the adjutant. The instructions and routes destined for the men detailed to conduct detachments to headquarters are filled in and delivered to these men, who are duly summoned by individual orders, and they are sent off to the points at which their detachments are collecting. The work is carried on day and night, with the least possible interruption. The Landwehr District Commander has also to notify by telegraph to headquarters the date and hour of the receipt of the orders for mobilisation, and, to prevent any misunderstanding, repeats the contents of the order received.

Within 24 hours of the first day of mobilisation, the District Commanders are bound to send the orders to the Landraths with regard to the men who have to be called out at once, and by these latter fresh orders and lists are sent to the parish authorities to be distributed as directed. The men so summoned are allowed 24 hours to set their affairs in order, and are then obliged to report themselves with the utmost speed at the headquarters of their Landwehr Battalion District, or at specially prescribed points of assembly. The place of assembly is not always at the headquarters of the Landwehr Battalion District, indeed it is probable that in cases where the regiment is stationed in or close to its own recruiting district, the reserve men will proceed direct to their regiment to save time, and will only join at district headquarters in the event of the regiment to which they belong being stationed at some distance off. In the latter case, to avoid overcrowding these places with men, Army Corps Commanders may appoint special rendezvous, of which notice is given in time of peace to the commanders of regiments and Landwehr districts. In order also to avoid calling up all the men on one day, a certain day may be ap-

pointed for the men of each arm, regard being had to the men who have to come from long distances and to the arms whose mobilisation is most complicated.

Men who live at a distance of less than $13\frac{1}{2}$ English (3 German) miles from the place of assembly receive no travelling allowance. Should they reside further off, the recruits report themselves to the tax-collector or, if there be no such official in the parish, to the head of the parish, and receive from him the regulation allowance, the repayment of which is subsequently adjusted by the military authorities. The railway is always to be used, if available, when the distance is over $13\frac{1}{2}$ miles, and every man travelling by road is required to cover not less than 32 English miles in one day or 46 in two. The civil authorities are bound, on the requisition of the Landwehr District Commander, to provide quarters for the men at the points of assembly.

D. SPECIAL RECRUITING REGULATIONS.

Before the war of 1866 almost every Prussian regiment was stationed in the Landwehr District corresponding to it, and bearing its name and number, and drew its recruits from that district, but since that period various circumstances have caused numerous exceptions to be made to this rule, the principal ones being the necessity of garrisoning Alsace and Lorraine with troops drawn from other portions of the Empire for political reasons, and the fact that three Army Corps (the IXth, Xth, and XIVth) have not sufficient population in their district to furnish the eight infantry regiments required for an Army Corps. The numbering of Landwehr Districts to correspond with line regiments was abolished on the 11th February, 1888, but previous to this date the system of a Landwehr District corresponding to one line regiment only had been partly abolished as no new districts were formed for the new infantry regiments raised in Prussia in 1881 and 1887 (the 97th to 99th, 128th to 132nd, and 135th to 138th); for, although the districts in Alsace and Lorraine formerly bore the numbers 97 to 99, and 128 to 131, they never had any connection with these regiments, and were, and are still merely agencies for recruiting and the control of furloughed lists, and it must be many years before they can supply recruits in a body to regiments corresponding to them. As noticed in Chapter XIII, Part II, the tendency lately has been to restore the old regiments bearing territorial names to their own Army Corps districts, and to place the newly raised regiments in the 15th Army Corps, from whose district some of them will probably eventually be recruited. For the infantry we may now say that regiments are recruited from one or more Landwehr Battalion Districts of the brigade to which they belong, and that, in the case of troops stationed in Alsace and Lorraine, if they have territorial names they are recruited from their own Army Corps district, if not they are recruited from the

nearest Prussian Districts. Thus the 17th, 25th, 60th, and 67th Regiments belonging to the 14th and 15th Army Corps are still recruited from their own districts, these districts being within a day's journey of their garrisons, and the 97th, 98th, 99th, 130th, 131st, 132nd, 135th, 136th, 137th and 138th, are recruited from the territory of the 4th, 7th, 8th, 9th, 10th, and 11th Army Corps, where there is an excess of men over those actually required for the corps. It is a noticeable fact, as showing how carefully everything is prepared beforehand in Germany as regards recruiting and mobilisation, that, for a year before the 22nd, 42nd, 45th, and 47th Regiments were moved back to their own Army Corps, these regiments, which previously had received their recruits from the 7th, 10th, and 11th Army Corps, received them from their own districts, so as to have as soon as possible a sufficiency of reserve men nearer their new stations to bring them up to the war footing.

The principle of the separation of contingents, as provided for by the Conventions, continues to be respected. The Bavarian, Saxon, and Württemberg troops are exclusively composed of men of these countries, the rare instances of subjects of other States being found in their ranks being generally those of the three-year volunteers, re-engaged men, or others domiciled in those countries. The 89th and 90th Regiments are composed of the men of Mecklenburg-Schwerin and Mecklenburg-Strelitz, the 91st of those of Oldenburg, the 92nd of those of Brunswick, the 93rd of those of Anhalt, the 94th of those of Saxe-Weimar-Eisenach, the 95th of those of Saxe-Meiningen and Saxe-Coburg-Gotha, the 96th of those of Saxe-Altenburg, Schwarzburg-Rudolstadt, and Reuss, and the 25th Division of Hessians, but all these regiments are filled up by Prussian recruits if their own contingents are insufficient, and a large proportion of their officers are Prussians. The men of Schwarzburg-Sondershausen, Lippe, Waldeck, Pyrmont, and the Hanse Towns are incorporated in Prussian regiments, but are stationed, as far as possible, near their own homes.

The Prussian Guard, as already mentioned, is recruited from the entire Kingdom of Prussia, and from Alsace and Lorraine, the latter countries furnishing a by no means inconsiderable contingent. The 109th is recruited from the entire territory of the 14th Army Corps, the 100th and 101st from that of the 12th Army Corps, the Bavarian Body Guard Infantry Regiment from the Kingdom of Bavaria, the 4th Bavarian Regiment from the entire territory of the 1st, and the 8th from that of the 2nd Bavarian Army Corps.

The recruits from the districts of Alsace and Lorraine are distributed among the regiments of the Guard, 4th, 7th, 10th, and 11th Corps.

In the cavalry, the cuirassiers are recruited from all over the army corps, but dragoon, hussar, and lancer regiments have generally two or more brigade districts told off to them for recruiting purposes, usually those belonging to the division to

which they are attached. Of the regiments attached to the 14th and 15th Army Corps, those belonging to the 4th, 8th, 9th and 10th Corps properly speaking (the 6th, 9th, and 13th Dragoons and 7th, 14th and 15th Lancers) continue to draw their recruits from their home districts, while those from more distant corps, such as the 14th and 15th Dragoons, receive their recruits from the nearest Prussian Districts. Rifles, artillery, engineers, and train recruit all over the army corps.

Every year the date at which the old soldiers are to be discharged and the number of recruits to be incorporated in each unit are published in a Cabinet order about the month of February. The order for 1888-89 ran as follows:—

“I. Discharge of the Reserve Men.

“(1.) The discharge of the men to be transferred to the reserve is to take place on the first and second day after the autumn manoeuvres are finished or after the return to their garrison of the troops who have taken part in the autumn manoeuvres.

“(2.) For the 2nd Foot Artillery the 31st August, for all other troops the 29th September is the latest day on which the men may be discharged. Detailed instructions will be given by Army Corps Commanders or by the Inspector-General of Foot Artillery for the Foot Artillery.

“(3.) The train soldiers called up for six months' colour service in May or November are to be discharged respectively on the 31st October, 1888, or the 30th April, 1889, the regimental workmen on the 29th September, 1888.

“(4.) Men are to be sent on furlough at the disposal of their regiments in such numbers as to permit of the number of recruits mentioned below being placed in each regiment, &c.

“II. Incorporation of the Recruits.

“(1.) For service with arms are to be placed in the ranks—

“In infantry battalions on the increased establishment	.. .. .	230 recruits.
“In infantry battalions on the lower establishment	.. .. .	200 ”
“In battalions of rifles and sharpshooters	.. .. .	190 ”
“In a cavalry regiment, at least	.. .. .	150 ”
“In a horse battery on the increased establishment, at least	.. .. .	35 ”
“In a horse battery on the lower establishment, at least	.. .. .	25 ”
“In a field battery on the increased establishment, at least	.. .. .	35 ”
“In a field battery on the lower establishment, at least	.. .. .	30 ”

"In a foot artillery battalion on the increased establishment	200 recruits.
"In a foot artillery battalion on the lower establishment	160 "
"In a pioneer battalion	160 "
"In a battalion of the railway regiment ..	135 "
"In the balloon detachment, at least ..	15 "
"In each train company :—	
"For three years' service, at least. . . .	15 "
"For six months' service in autumn, 1888, and in spring, 1889, at each time ..	38 "

"The places of men detailed as sick attendants or bakers are to be filled up by extra recruits being placed in the ranks.

"(2.) At least one third of the establishment of regimental workmen in each regiment is to be replaced by recruits.

"(3.) If in any regiment, &c., a change has to be made in the above quota, the War Ministry is empowered to take the necessary action.

"(4.) For the balloon detachment, smart men of medium weight, with good eyesight, and who have an inclination for the work, are to be taken. Their minimum height is to be 5 ft. 1.6 in.

"(5.) The recruits are to be placed in the ranks under arrangements made by Army Corps Commanders, in the cavalry between the 1st and 6th October, 1888, in the other arms between the 5th and 10th November, 1888; the recruits for the 2nd Foot Artillery, the Under Officers' Schools, and for the regimental workmen are to be placed in the ranks on the 1st October, 1888, and the train recruits for the spring period on the 1st May, 1889."

On receipt of the above order, each Army Corps Commander forwards to the War Ministry, by the 15th April, a statement showing the number of recruits his corps requires, indicating the number of men required for the ranks and for service as tailors, shoemakers, saddlers and hospital attendants by each regiment, &c., and taking into account, as regards rifle battalions, the number of forester pupils who will enter these battalions, which number is communicated by the Inspector of Rifles and Sharpshooters. The War Ministry thereupon apportions the contingents to be furnished by the various Army Corps Districts. Officers commanding those districts then divide their quota among their Brigade Districts according to their population, and notify to which regiment they will be despatched when levied. If one Brigade District cannot furnish its quatum, the deficit is made good from another. In their turn the Brigade Commanders subdivide the quota of their districts among their battalion districts and recruiting circles.

In a similar manner, the number of men of the Ersatz Reserve to be called up for a first, second, or third training is notified by Cabinet order, and is divided by the War Ministry and the other grades of the military hierarchy as above.

On the days appointed by Army Corps Commanders, according to the above order, the recruits are assembled at the headquarters of the Landwehr Battalion or Company District (as may be found most convenient) in which they reside, under arrangements made by the Landwehr authorities, and from these points they are conducted by road or rail to their regiments by detachments sent from the regiments for this purpose. On arrival they are taken on the strength of their regiments, are again medically inspected, and are sworn in on the colour or standard. They are then examined in reading and writing, and those who do not pass are sent to instruction in these subjects. Each recruit on joining must bring with him a suit of decent clothing, a pair of boots, and two shirts, and if he does not possess these articles the parish authorities have to furnish him with them.

On completion of their period of colour service, men are discharged to the reserve. Each receives a warrant to proceed to the place of his residence, and a military pass giving all information and rules for his guidance, as well as a certificate of conduct, good or bad. Each man has to report his address to the sergeant-major of the Landwehr Company District within 14 days of his being discharged, and all changes of residence and journeys of over 14 days in length have also to be reported.

Men of the reserve and 1st Ban of the Landwehr of unexceptionable character may, in time of peace, be granted a furlough of two years to enable them to proceed to ultra-European countries (exclusive of the borders of the Mediterranean and Black Sea), with the condition that they must return in the event of mobilisation. If before the termination of such furlough they can show by a Consul's certificate that they are in permanent business as merchants, tradesmen, &c., they may be allowed a five years' furlough, with exemption from manœuvres and mobilisation, and before the expiration of this, a further leave may be granted for the remaining period of their service. Men of the 2nd Ban of the Landwehr require no permission to leave the country, but are bound to return on mobilisation. If they have attained a permanent position abroad, they can even be freed from this obligation.

Men of the Ersatz Reserve belong to the controls of the Landwehr Company District in which they reside, and are bound to report themselves to the district sergeant-major within fourteen days of their receiving their order of transfer to that reserve.

E. RECRUITING AND OTHER STATISTICS.

It will here be advisable to collect a number of statistics bearing on the recruiting of the German Army and the numbers of trained men the system sketched in the last section actually produces.

According to von Fircz's "Military Statistics," a number A , which loses annually $\frac{m}{n}$ of its value, becomes at the end of the 1st, 2nd p th year—

$$A\left(1 - \frac{m}{n}\right), A\left(1 - \frac{m}{n}\right)^2, \dots A\left(1 - \frac{m}{n}\right)^p.$$

$$\text{The sum of those numbers is } A\left(1 - \frac{m}{n}\right) \frac{1 - \left(1 - \frac{m}{n}\right)^p}{1 - \left(1 - \frac{m}{n}\right)}.$$

If now $\frac{m}{n} = \frac{3}{100}$ and p varies from 1 to 17, the coefficient of A assumes the following values:—

Values of p .	Coefficient.	Values of p .	Coefficient.	Values of p .	Coefficient.	Values of p .	Coefficient.
1	0.97	6	5.4007	11	9.2053	15	11.8657
2	1.9109	7	6.2086	12	9.8886	16	12.4597
3	2.8237	8	6.9924	13	10.5611	17	13.0650
4	3.709	9	7.7525	14	11.2132		
5	4.5677	10	8.4897				

In Germany, a newly incorporated contingent receives 10 per cent. additional men (*Nach-Ersatz*) in its first year, and loses 4 per cent.; in each subsequent year it loses 3 per cent. At the end of the first year, the contingent (A) therefore becomes—

$$A + \frac{10A}{100} - \frac{4}{100}\left(A + \frac{10A}{100}\right) = 1.056 A.$$

The total of 1, 2, 3, 18 contingents is therefore—

At the end of the	1st year	1.056 A.		
"	2nd	" 1.056 A × 1.97	=	2.0803 A.
"	3rd	" 1.056 A × 2.9109	=	3.0739 A.
"	4th	" 1.056 A × 3.8237	=	4.0378 A.
"	5th	" 1.056 A × 4.709	=	4.9727 A.
"	6th	" 1.056 A × 5.5677	=	5.8795 A.
"	7th	" 1.056 A × 6.4007	=	6.7591 A.
"	8th	" 1.056 A × 7.2086	=	7.6123 A.
"	9th	" 1.056 A × 7.9924	=	8.4399 A.
"	10th	" 1.056 A × 8.7525	=	9.2426 A.
"	11th	" 1.056 A × 9.4897	=	10.0211 A.
"	12th	" 1.056 A × 10.2053	=	10.7768 A.
"	13th	" 1.056 A × 10.8886	=	11.4983 A.
"	14th	" 1.056 A × 11.5611	=	12.2045 A.
"	15th	" 1.056 A × 12.2132	=	12.8971 A.
"	16th	" 1.056 A × 12.8657	=	13.5549 A.
"	17th	" 1.056 A × 13.4597	=	14.2134 A.
"	18th	" 1.056 A × 14.0650	=	14.8421 A.

The latter column gives, therefore, the coefficients by which any contingent of recruits must be multiplied to find how many men it gives at the end of any number of years up to 18 after its incorporation. The above figures do not apply to the contingents for six months' service in the train, which receive no *Nach-Ersatz*, nor to one-year volunteers, and the coefficients are smaller, that for 12 contingents being, assuming the contingent to lose 4 per cent. the first year, and 3 per cent. in subsequent years, 9.7970 (i.e., 0.96×10.2053), and, for 18 contingents, 13.4928.

Calculating on the above figures, and bearing in mind the augmentation of the army which took place in 1881, it is possible to arrive at a close approximation to the strength of the German Army in 1888. The additional formations raised in April, 1887 caused no actual increase of strength at that time, as the vacancies caused by transfers of companies, &c., to other regiments were at once filled up, and the newly authorised establishments attained to by recalling from furlough the men in their third year of service sent on furlough at the disposal of their regiments. It was in November, 1887, that the increased contingent of recruits was called in, and the table opposite shows the number of fully trained men available in the line, reserve, and Landwehr, in October, 1887. To it has been added a column, showing the strength of six classes of the 2nd Ban of the Landwehr brought on the rolls again by the law of 11th February, 1888, so that the totals are approximately correct for April, 1888.

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APPROXIMATE NUMBER OF FULLY TRAINED MEN AVAILABLE, APRIL, 1888.

Troops existing prior to April, 1881.		Troops raised in April, 1881.	Number of Recruits incorporated per annum.	Total Strength of 12 Contingents for each unit in October, 1887.	2nd Ban of Landwehr added for each unit, February, 1888.	Total Annual Contingent for Army up to 1880 (November).	Total Annual Contingent for Army from 1881 (November), sawanda.	Total Strength of Standing Army, Reserve, and Landwehr in October, 1887.	Total Strength of 2nd Ban of Landwehr, February, 1888.	Number of N.-C. Officers, October, 1887.	Total Fighting Strength in April, 1888.
Infantry :—											
33 Battalions	...	...	225	2,485	914	7,425	7,425	88,041	80,182	...	...
496 "	...	...	190	2,048	772	82,940	82,940	983,016	336,418	...	...
	...	34 battalions.	190	1,117	...	...	6,460	37,986	...	...	...
Total		...	...	...	...	90,285	90,725	1,011,042	396,680	85,297	1,412,919
Cavalry :—											
93 Regiments	...	None	190	1,417	609	13,960	13,960	150,381	86,637	...	...
Total		...	...	...	...	13,960	13,960	150,381	86,637	8,691	215,709
Field Artillery :—											
254 Field batteries	...	...	30	323	132	7,620	7,620	82,144	53,489	...	...
46 Horse batteries	...	...	25	289	102	1,150	1,150	12,397	4,682	...	...
	...	40 field batteries.	30	178	...	...	1,200	7,066	...	...	...
Total		...	...	...	...	8,770	8,970	101,597	60,181	7,064	168,842
Foot Artillery :—											
4 Battalions	...	...	200	2,156	812	800	800	8,624	2,248	...	...
4 (Bavarian) battalions	...	...	180	1,940	731	720	720	7,781	2,928	...	...
21 Battalions	...	2 battalions.	160	1,725	649	3,860	3,860	36,221	13,687	...	...
	...	...	160	940	...	...	320	1,981	...	...	...
Total		...	...	...	...	4,980	5,200	64,487	19,810	2,261	77,568

APPROXIMATE NUMBER OF FULLY TRAINED MEN AVAILABLE—continued.

Troops existing prior to April, 1881.	Troops raised in April, 1881.	Number of Recruits incorporated per annum.	Total Strength of 12 Contingents for each unit in October, 1887.	2nd Ban of Landwehr added for each unit, February, 1888.	Total Annual Contingent for Army up to 1880 (November).	Total Annual Contingent for Army from 1881 (November), onwards.	Total Strength of Standing Army, Reserve, and Landwehr in October, 1887.	Total Strength of 2nd Ban of Landwehr, February, 1888.	Number of N.-C. Officers, October, 1887.	Total Fighting Strength in April, 1888.
Engineers:—										
16 Pioneer battalions ...	...	160	1,725	649	2,560	2,560	27,697	10,390	...	...
2 (Bavarian) Pioneer batns.	...	200	2,156	812	400	400	4,312	1,624	...	...
2 Railway battalions ...	1 pioneer batn.	160	841	...	...	160	941	...	...	...
1 Railway company ...	...	135	1,465	548	270	270	2,911	1,097	...	...
	...	55	563	223	55	55	693	223	...	...
Total ...	...	...	...	...	3,295	3,445	36,354	13,324	1,966	51,664
Troops:—										
30 Companies, 3 years' men ...	...	15	163	61	595	595	5,206	2,363	...	...
6 months' men ...	None.	88	882	325	2,432	2,432	33,599	12,680	...	...
2 Bavarian Sanitary Companies ...	...	116	1,260	471	232	232	2,500	943	...	...
Total ...	...	...	...	...	3,249	3,249	42,306	15,986	...	59,895
Grand Total ...	...	...	...	...	124,399	132,539	1,394,166	582,528	1,304	1,986,277

On the above table the following remarks are necessary:—

The 33 battalions on the higher strength have not been the same for all the 18 years with which the table deals, as the regiments of the 15th Army Corps have been relieved. This does not, however, affect the totals.

Of the infantry battalions on the lower establishment, six (the 4th and 8th Bavarian regiments) were raised to the higher establishment (225 recruits per annum) from 1883. As, however, 31 other Bavarian battalions only received from that date 183 recruits each, the totals are again unaffected.

Under the heading of "N.C. Officers in October, 1887," those counted as musicians are included; but aspirant paymasters are not, nor are the non-commissioned officers shown in Appendix III under the headings Landwehr Districts, Special Formations, and Unattached.

The figures for the 2nd Ban of the Landwehr are not quite accurate, as a small number of units (see Chapter XIII, Part II.) was formed between 1870 and 1881. To have shown these would have made the table too intricate.

Finally, the contingent joining in October and November, 1887, has not been counted, but as a set-off against it, the class of men transferred to the 2nd Ban of the Landsturm in April, 1888, has been included.

In addition to the annual contingents, a large number of three-year volunteers are enlisted, but as these are mostly promoted to be non-commissioned officers, and their number is variable, they have been omitted.

The above table by no means represents the whole fighting strength of Germany, but only the number of fully-trained men who have been incorporated as recruits in the ordinary manner. To those figures must be added two very important items, the one-year volunteers and the (late 1st Class) Ersatz Reservists who have undergone training.

The average number of one-year volunteers was, until a few years ago, about 7,000. This number has been much exceeded of late years, but as a large number of one-year volunteers become Reserve Officers, if we assume 7,000 of them to pass to the reserve each year, and also that all enter at 20 years of age (which again is incorrect, as many enter younger), and allow for 18 contingents, we shall probably be within the mark. The number of one-year volunteers available will, therefore, be $7,000 \times 13.4928$ or 94,450.

As to the (late 1st Class) Ersatz Reserve, the following table gives the number of men who have been called out for training since 1881, when the law permitting them to be trained was first passed:—

	1st Training (10 weeks).	2nd Training (4 weeks).	3rd Training (2 weeks).	4th Training (2 weeks).
1881	39,381	..	..	..
1882	21,138	..	..	..
1883	22,044	18,013	..	..
1884	21,468	13,130	11,100	..
1885	21,468	13,130	11,100	..
1886	19,195	13,030	11,000	9,275
1887	19,195	13,030	11,000	9,275

Of the men who have passed through a first training, there will therefore remain in April, 1888, allowing them to lose 8 per cent. per annum—

Contingent of 1881	..	..	..	..	32,764
1882	..	..	..	..	18,160
1883	..	..	..	..	19,508
1884	..	..	..	..	19,600
1885	..	..	..	..	20,180
1886	..	..	..	..	18,619
1887	..	..	..	..	19,195
Total..	..	..	..	..	148,026

i.e., Germany has at her disposal 148,026 men who have gone through *at least* a 10 weeks' training, of whom some 70,000 have been trained in all for 14 weeks, 44,000 for 16 weeks, and 18,500 for 18 weeks; that is to say, that the least trained man has received a training equal to that of a British militia recruit.

Adding these figures together, we find the fighting strength of Germany, exclusive of officers and non-combatants, to be April, 1888:—

Fully-trained men ..	..	1,986,277
One-year Volunteers ..	..	94,450
Partially trained men ..	..	148,026
Total ..	..	2,228,753

This is exclusive of the Landsturm or general levy of men between 17 and 45, which can only be called out in the event of the country being invaded. It must also be noticed that, while recruits join the army in October or November, the oldest class of the Landwehr is only transferred to the Landsturm in the following April, so that during those months 19 annual contingents of men are available.

Passing now to the future, let us examine what the strength of the German Army will be 18 years hence, when the augmentation of the contingent of recruits taking effect from November, 1887, has produced its maximum results, which will be any time after November, 1905. If no augmentation of the army take place before that date, the war strength of Germany will then be:—

PROBABLE WAR STRENGTH OF GERMANY IN THE YEAR 1905.

Troops.	Number of Recruits per annum per unit.	Strength of 18 Contingents for each unit in 1906.	Yearly Contingent for Army.	Total Strength of 18 Con- tingents in 1906.	Number of Non-commis- sioned Officers.	Total Number of fully Trained Men in 1906.
Infantry :—						
88 battalions ..	280	3,413	19,090	283,296	..	..
480 ..	200	2,968	86,000	1,276,240	..	..
21 (rifle) battalions ..	190	2,830	3,980	59,213	..	..
Total ..	..	..	109,080	1,618,748	35,297	1,654,045
Cavalry :—						
93 regiments ..	150	2,226	13,960	207,018	8,691	215,709
Field Artillery :—						
85 field batteries ..	85	519	1,926	18,179	..	..
282 ..	80	445	8,460	126,546	..	..
6 horse batteries ..	25	513	210	3,116	..	..
41 ..	25	371	1,025	15,211	..	..
Total ..	..	..	10,920	163,062	7,064	169,116
Foot Artillery :—						
10 battalions ..	200	2,968	2,000	29,680	..	..
21 ..	160	2,374	3,360	49,862	..	..
Total ..	..	..	5,360	79,542	3,361	82,903

PROBABLE WAR STRENGTH OF GERMANY IN THE YEAR 1905—continued.

Troops.		Number of Recruits per annum per unit.	Strength of 18 Contingents for each unit in 1906.	Yearly Contingent for Army.	Total Strength of 18 Con- tingents in 1906.	Number of Non-com- missioned Officers.	Total Number of fully Trained Men in 1906.
Engineers:—							
17 Pioneer battalions	..	160	2,374	2,720	40,365	..	..
2 (Bavarian) pioneer battalions	..	200	2,968	400	5,936	..	..
4 Railway battalions	..	135	2,008	540	8,014	..	..
1 " battalion	..	110	1,682	110	1,682	..	..
1 Telegraph company	..	40	594	40	594	..	..
Balloon detachment	..	15	223	15	223	..	..
Total	..	..	..	3,825	56,764	1,966	58,730
Train:—							
53 companies, each 3 years' men	..	15	223	795	11,798	..	..
" " 6 months' men	..	76	1,025	4,028	54,398	..	..
2 Bavarian Sanitary Companies	..	116	1,721	232	8,443	..	..
Total	..	..	..	5,055	69,579	1,304	70,883
Grand total	..	..	..	148,195	2,198,708	57,583	2,251,296

To these figures must be added, on the same principles as above, 94,450 one-year volunteers and the trained men of the Ersatz Reserve. If we take the figure of men ordered to undergo a first training in 1888, namely, 17,100,* as the number to be trained annually in years to come, and only allow for 16 contingents, as many of the men are not passed to the Ersatz Reserve till their 22nd or 23rd year, we get as the total number available in 1905—

$$17,100 \times 12.351 = 211,202.$$

The total fighting strength of Germany, exclusive of officers, non-combatants, and Landsturm, will therefore be in 1905—

Fully trained men..	..	..	2,251,286
One-year volunteers	..	..	94,450
Partially trained men	..	..	211,202
Total			2,556,938

Passing now to the officers, the following table shows the numbers of reserve and Landwehr officers actually holding commissions according to the Army Lists for 1887 :†—

* Viz., 12,000 in Prussia, &c., 1,750 in Saxony, 1,350 in Württemberg, and 2,000 in Bavaria.

† These figures do not, of course, include officers of the 2nd Lan of the Landwehr.

NUMBER OF RESERVE AND LANDWEHR OFFICERS, 1887.

Contingent and Arm.	Reserve.					Landwehr.				
	Field Officer.	Captains.	1st Lieuts.	2nd Lieuts.	Field Officers.	Captains.	1st Lieuts.	2nd Lieuts.		
Prussia, &c. :—										
Infantry	18	161	3,610	14	387	817	2,524		
Rifles	1	136	..	8	26	50		
Cavalry ..	1	38	176	1,210	8	89	277	545		
Field Artillery	4	30	554	..	9	129	296		
Foot Artillery	5	11	99	..	40	39	70		
Pioneers	7	18	80	2	24	18	40		
Railway Troops	1	28	56	..	9	30	118		
Train	11	644	..	20	44	17		
Total ..	1	73	436	6,089	24	536	1,380	3,660		
Saxony :—										
Infantry	11	91	254	..	30	65	130		
Rifles	1	3	20	..	5	2	5		
Cavalry	10	24	61	..	2	7	13		
Field Artillery	4	30	..	1	7	13		
Foot Artillery	5	17	..	2	..	4		
Pioneers	8	5	..	2	2	5		
Train	4	21	..	..	2	4		
Total	22	139	406	..	49	85	174		
Württemberg :—										
Infantry	1	10	222	..	9	30	98		

NUMBER OF RESERVE AND LANDWEHR OFFICERS, 1887—continued.

Contingent and Arm.	Reserve.				Landwehr.			
	Field Officer.	Captains.	1st Lieuts.	2nd Lieuts.	Field Officers.	Captains.	1st Lieuts.	2nd Lieuts.
Württemberg (continued) :—								
Rifles 8	.. 34	..	.. 2	.. 8	.. 13
Cavalry 42	{	..	.. 3	.. 8
Field Artillery 4	.. 4
Foot Artillery 1	.. 5		..	..	.. 9
Pioneers 1	.. 25		..	..	..
Train
Total	1	20	326	..	11	45	192
Bavaria :—								
Infantry	3	15	521	..	6	97	466
Rifles 9	.. 21	..	..	.. 3	.. 13
Cavalry	1	2	90	..	..	.. 6	.. 52
Field Artillery	78	..	..	.. 8	.. 74
Foot Artillery 1	38	..	..	.. 3	.. 34
Pioneers 2	9	..	2	.. 9	.. 20
Railway Troops 1	..	..	..	.. 5	.. 1
Train	22	..	..	..	.. 15
Total	4	30	779	..	8	130	675
Totals :—								
Infantry	33	277	4,607	14	432	1,009	2,218
Rifles	1	4	177	—	13	31	68

NUMBER OF RESERVE AND LANDWEHR OFFICERS, 1887—*continued*.

Contingent and Arm.	Reserve.				Landwehr.			
	Field Officer.	Captains.	1st Lieuts.	2nd Lieuts.	Field Officers.	Captains.	1st Lieuts.	2nd Lieuts.
Totals (<i>continued</i>) :—								
Cavalry	1	49	217	1,395	8	93	298	623
Field Artillery* ..	..	4	36	692	..	10	147	391
Foot Artillery* ..	..	5	16	166	..	42	41	112
Pioneers .. ..	..	7	28	99	2	28	33	65
Railway Troops ..	..	1	30	56	..	9	35	119
Tram .. ..	..	..	17	412	..	20	46	45
Grand Total	1	100	625	7,604	24	617	1,640	4,641

Medical Officers.	Reserve.				Landwehr.			
	Surgeon-Major and above.	Surgeons.	Asst. Surgeons.	Surgeons-Major and above.	Surgeons.	Asst. Surgeons.	Surgeons-Major and above.	Surgeons.
Prussia	1	85	894	20	370	552	..	..
Saxony .. ..	..	31	87	..	17	24	..	..
Württemberg ..	..	11	54	..	28	23	..	..
Bavaria .. ..	..	36	443	..	(included in reserve)	..	..	..
Total	1	163	1,478	20	415	599	..	..

* Allowing 30 of the Württemberg Artillery Reserve 2nd Lieutenants to belong to the Field and 12 to the Foot Artillery.

The population of the army corps territorial districts was as follows on the 1st December, 1885, excluding all persons belonging to the active army and all foreigners:—

1st Army Corps	..	..	..	..	2,727,690
2nd „	..	..	..	..	2,686,164
3rd „	..	..	..	..	3,585,368
4th „	..	..	..	..	3,130,162
5th „	..	..	..	..	2,110,411
6th „	..	..	..	..	3,029,728
7th „	..	..	..	..	3,432,875
8th „	..	..	..	..	2,926,357
9th „	..	..	..	..	2,853,476
10th „	..	..	..	..	2,492,228
11th „	..	..	..	..	2,681,347
25th (Hessian) Division	..	..	..	..	938,357
12th Army Corps	..	..	..	..	3,103,259
13th „	..	..	..	..	1,965,403
14th „	..	..	..	..	1,568,884
15th „	..	..	..	..	1,477,916
1st Bavarian Army Corps	..	..	..	..	2,649,818
2nd „ „	..	..	..	..	2,660,908
Total	..	..	..	..	46,020,351

and the results of the recruiting for 1885 were as follows in each:—

RESULTS OF RECRUITING, 1885.

District of the	Decision of the Recruiting Authorities.					Volunteers liable to Service.	Emigrants noted as having Escaped their Military Obligations.
	Morally Unfit.	Physically Unfit.	Transferred to the I or II Class Ersatz Reserve or II Class Seewehr.*	Taken for Service.	Total.		
1st Army Corps ..	113	4,725	10,249	9,148	24,235	1,330	1,979
2nd ..	77	3,381	9,918	8,858	22,234	904	3,150
3rd ..	129	6,011	14,047	9,784	29,971	2,568	578
4th ..	82	4,245	13,134	8,480	25,941	2,049	450
5th ..	81	2,671	6,718	6,734	16,204	843	779
6th ..	150	4,068	10,786	9,866	24,370	1,079	597
7th ..	74	3,840	14,647	10,014	28,575	1,510	733
8th ..	33	3,646	12,277	9,023	24,984	824	713
9th ..	38	3,192	11,486	8,512	23,228	1,645	1,336
10th ..	38	2,742	8,587	7,372	18,739	1,683	978
11th ..	53	3,246	8,990	8,214	20,500	1,311	969
25th (Hessian) Division ..	27	1,061	3,297	7,384	7,384	445	324
12th Army Corps ..	98	6,609	10,903	9,445	27,055	1,117	353
13th ..	60	2,765	4,844	6,754	14,423	525	1,338
14th ..	21	2,371	5,069	5,250	12,711	687	687
15th ..	25	2,870	4,523	4,971	12,989	586	1,849
1st Bavarian Army Corps ..	53	4,359	7,254	8,808	20,479	711	272
2nd ..	53	5,099	6,520	9,094	20,761	872	1,032
Total ..	1,225	66,898	162,239	142,776	873,133	20,561	18,017

* As existing under former regulations. The 2nd Class Ersatz Reserve has been transferred to the 1st Ban of the Landsturm.

The following were the ages of the men dealt with in the above table, those of 20 years of age belonging to the proper contingent for the year 1885, those older than 20 being men put back from former contingents:—

Age.	Decision of the Recruiting Authorities.					Volunteers liable to Service.
	Morally Unfit.	Physically Unfit.	Transferred to the I or II Class Ersatz Reserve or II Class Seewehr.	Taken for Service.	Total.	
20 years ..	275	31,017	11,971	64,569	107,830	13,496
21 " ..	257	11,643	8,717	37,866	58,483	2,689
22 " ..	264	20,887	136,711	38,650	196,492	1,636
Older ..	431	3,868	4,840	1,691	10,328	2,740
Total ..	1,225	66,893	162,239	142,776	373,133	20,561
Percentage	0·3	17·9	43·5	38·3	90·6	5·0

The percentage of the 13,017 men reported as emigrants was 4·4. The total number of men transferred to the Ersatz Reserve, I and II Class, or to the II Class *Seewehr* in the years 1876 to 1885, was 1,433,434.

CHAPTER VI.

FIELD TROOPS: INFANTRY AND RIFLES.

(A.) INFANTRY.

(a.) *Peace Formation.*

THE German infantry consists of 166 regiments, of which there are—

151 regiments of 3 battalions, viz. :—

- 9 regiments of the Prussian Guard,
- 103 Prussian regiments, or regiments administered by the Prussian War Ministry,
- 12 Saxon regiments,
- 8 Württemberg regiments,
- 19 Bavarian regiments,

15 regiments of 4 battalions, all Prussian or administered by the Prussian War Ministry. These regiments are the 13th, 14th, 16th, 17th, 18th, 39th, 40th, 53rd, 65th, 80th, 83rd, 112th, 113th, 144th, and 129th of the Line.

The Prussian Guard and the Bavarian regiments are numbered in special series, the remainder have consecutive numbers from 1 to 139, the number 127 being vacant. Of these the 1st to 12th, 89th, 100th, 101st, 109th, 110th, 119th, and 123rd bear the name "Grenadiers," and the 33rd to 40th, 73rd, 80th, 86th, 90th, and 108th that of "Fusiliers." The remainder are termed simply "Infantry Regiments." The battalions are termed 1st to 4th in all four-battalion regiments; 1st to 3rd in the 89th, 135th to 138th, in all Fusilier, and in the Saxon and Bavarian Regiments; and 1st, 2nd, and Fusilier Battalions in all other regiments. The companies are numbered throughout the regiment, the 1st to 4th Companies forming the 1st Battalion, the 5th to 8th the 2nd, the 9th to 12th the Fusilier or 3rd Battalion, and the 13th to 16th the 4th Battalion. In the Prussian Guard (except the Guard Fusiliers) and in all Grenadier Regiments the privates of the 1st and 2nd Battalions* are termed Grenadiers (*Grenadiere*), in all Fusilier Battalions and in the Fusilier Regiments, Fusiliers (*Füsiliere*), except in the 108th, in which they are called Sharpshooters (*Schützen*), and in all other battalions and regiments Musketeers (*Musketierte*), except in the 115th, in which they are named Guardsmen (*Gardisten*). These various designations of regiments, &c., make no difference in the training or utilisation of the men. They are simply traditional titles of honour.

The following list gives the names and titles of all the infantry regiments:—

PRUSSIAN GUARD:—

1st Foot Guards. (*Erstes-Garde-Regiment zu Fuss.*)
 2nd Foot Guards.
 Emperor Alexander's Guard Grenadiers, No. 1.
 Emperor Francis' Guard Grenadiers, No. 2.
 Guard Fusiliers.
 3rd Foot Guards.
 4th Foot Guards.
 3rd Guard Grenadiers (Queen Elizabeth's).
 4th Guard Grenadiers (Queen's).

LINE INFANTRY:—

King Frederick III. Grenadiers (1st East Prussian), No. 1.
 King Frederick William IV. Grenadiers (1st Pomeranian), No. 2.
 2nd East Prussian Grenadiers, No. 3.
 3rd East Prussian Grenadiers, No. 4.
 4th East Prussian Grenadiers, No. 5.
 1st West Prussian Grenadiers, No. 6.
 King William I. Grenadiers (2nd West Prussian), No. 7.
 Royal (*Leib*) Grenadiers (1st Brandenburg), No. 8.
 Colberg Grenadiers (2nd Pomeranian), No. 9.
 1st Silesian Grenadiers, No. 10.

* 3rd Battalion also in the 89th Grenadiers.

Crown Prince Frederick William's Grenadiers, No. 11.
 Prince Charles of Prussia's Grenadiers (2nd Brandenburg), No. 12.
 1st Westphalian Infantry, No. 13.
 3rd Pomeranian Infantry, No. 14.
 Prince Frederick of the Netherlands Infantry (2nd Westphalian), No. 15.
 3rd Westphalian Infantry, No. 16.
 4th Westphalian Infantry, No. 17.
 1st Posen Infantry, No. 18.
 2nd Posen Infantry, No. 19.
 8rd Brandenburg Infantry, No. 20.
 4th Pomeranian Infantry, No. 21.
 1st Upper Silesian Infantry, No. 22.
 2nd Upper Silesian Infantry, No. 23.
 4th Brandenburg Infantry (Grand Duke Frederick Francis II. of Mecklenburg-Schwerin's), No. 24.
 1st Rhenish Infantry, No. 25.
 1st Magdeburg Infantry, No. 26.
 2nd Magdeburg Infantry, No. 27.
 2nd Rhenish Infantry, No. 28.
 3rd Rhenish Infantry, No. 29.
 4th Rhenish Infantry, No. 30.
 1st Thuringian Infantry, No. 31.
 2nd Thuringian Infantry, No. 32.
 East Prussian Fusiliers, No. 33.
 Pomeranian Fusiliers, No. 34.
 Brandenburg Fusiliers, No. 35.
 Magdeburg Fusiliers, No. 36.
 Westphalian* Fusiliers, No. 37.
 Silesian Fusiliers, No. 38.
 Lower Rhenish Fusiliers, No. 39.
 Hohenzollern Fusiliers, No. 40.
 5th East Prussian Infantry, No. 41.
 5th Pomeranian Infantry, No. 42.
 6th East Prussian Infantry, No. 43.
 7th East Prussian Infantry, No. 44.
 8th East Prussian Infantry, No. 45.
 1st Lower Silesian Infantry, No. 46.
 2nd Lower Silesian Infantry, No. 47.
 5th Brandenburg Infantry, No. 48.
 6th Pomeranian Infantry, No. 49.
 3rd Lower Silesian Infantry, No. 50.
 4th Lower Silesian Infantry, No. 51.
 6th Brandenburg Infantry, No. 52.
 5th Westphalian Infantry, No. 53.
 7th Pomeranian Infantry, No. 54.
 6th Westphalian Infantry, No. 55.
 7th Westphalian Infantry, No. 56.
 8th Westphalian Infantry, No. 57.
 3rd Posen Infantry, No. 58.
 4th Posen Infantry, No. 59.
 7th Brandenburg Infantry, No. 60.
 8th Pomeranian Infantry, No. 61.
 3rd Upper Silesian Infantry, No. 62.
 4th Upper Silesian Infantry, No. 63.
 Prince Frederick Charles of Prussia's Infantry (8th Brandenburg), No. 64.
 5th Rhenish Infantry, No. 65.
 3rd Magdeburg Infantry, No. 66.
 4th Magdeburg Infantry, No. 67.
 6th Rhenish Infantry, No. 68.
 7th Rhenish Infantry, No. 69.
 8th Rhenish Infantry, No. 70.
 3rd Thuringian Infantry, No. 71.
 4th Thuringian Infantry, No. 72.

* Quite a misnomer, as the regiment wears the uniform of, and is recruited from, the 5th Army Corps.

Hanoverian Fusiliers, No. 73.
 1st Hanoverian Infantry, No. 74.
 1st Hanseatic Infantry, No. 75.
 2nd Hanseatic Infantry, No. 76.
 2nd Hanoverian Infantry, No. 77.
 East Frisian Infantry, No. 78.
 3rd Hanoverian Infantry, No. 79.
 Hessian Fusiliers, No. 80.
 1st Hessian Infantry, No. 81.
 2nd Hessian Infantry, No. 82.
 3rd Hessian Infantry, No. 83.
 Schleswig Infantry, No. 84.
 Holstein Infantry, No. 85.
 Schleswig-Holstein Fusiliers, No. 86.
 1st Nassau Infantry, No. 87.
 2nd Nassau Infantry, No. 88.
 Grand Ducal Mecklenburg Grenadiers, No. 89.
 Grand Ducal Mecklenburg Fusiliers, No. 90.
 Oldenburg Infantry, No. 91.
 Brunswick Infantry, No. 92.
 Anhalt Infantry, No. 93.
 5th Thuringian Infantry (Grand Duke of Saxony's), No. 94.
 6th Thuringian Infantry, No. 95.
 7th Thuringian Infantry, No. 96.
 Infantry Regiment, No. 97.
 Infantry Regiment, No. 98.
 Infantry Regiment, No. 99.
 1st Saxon Body Guard (*Leib*) Grenadiers, No. 100.
 2nd Saxon Grenadiers (Emperor William, King of Prussia's), No. 101.
 3rd Saxon Infantry (Prince Regent Luitpold of Bavaria's), No. 102.
 4th Saxon Infantry, No. 103.
 5th Saxon Infantry (Prince Frederick Augustus'), No. 104.
 6th Saxon Infantry, No. 105.
 7th Saxon Infantry (Prince George's), No. 106.
 8th Saxon Infantry (Prince John George's), No. 107.
 Saxon Sharpshooters (Fusiliers), (Prince George's), No. 108.
 1st Baden Body Guard (*Leib*) Grenadiers, No. 109.
 2nd Baden Grenadiers (Emperor William's), No. 110.
 3rd Baden Infantry, No. 111.
 4th Baden Infantry (Prince William's), No. 112.
 5th Baden Infantry, No. 113.
 6th Baden Infantry, No. 114.
 1st Grand Ducal Hessian (Guard), Infantry, No. 115.
 2nd Grand Ducal Hessian Infantry (Grand Duke's), No. 116.
 3rd Grand Ducal Hessian Body Guard (*Leib*) Infantry, No. 117.
 4th Grand Ducal Hessian Infantry (Prince Charles'), No. 118.
 Queen Olga's Grenadiers (1st Württemberg), No. 119.
 Emperor William King of Prussia's Infantry (2nd Württemberg),
 No. 120.
 3rd Württemberg Infantry, No. 121.
 4th Württemberg Infantry, No. 122.
 King Charles' Grenadiers (5th Württemberg), No. 123.
 King William's Infantry (6th Württemberg), No. 124.
 Emperor Frederick, King of Prussia's Infantry (7th Württemberg),
 No. 125.
 8th Württemberg Infantry, No. 126.
 (No. 127, vacant).
 Infantry Regiment, No. 128.
 Infantry Regiment, No. 129.
 Infantry Regiment, No. 130.
 Infantry Regiment, No. 131.
 Infantry Regiment, No. 132.
 9th Saxon Infantry, No. 133.
 10th Saxon Infantry, No. 134.
 Infantry Regiment, No. 135.
 Infantry Regiment, No. 136.
 Infantry Regiment, No. 137.

Infantry Regiment, No. 138.

11th Saxon Infantry Regiment, No. 139.

ROYAL BAVARIAN INFANTRY:—

- Body Guard Infantry Regiment (*Infanterie-Leib-Regiment*).
- 1st Infantry Regiment (The King's).
- 2nd Infantry Regiment (The Crown Prince's).
- 3rd Infantry Regiment (Prince Charles of Bavaria's).
- 4th Infantry Regiment (King Charles of Württemberg's).
- 5th Infantry Regiment (Grand Duke of Hesse's).
- 6th Infantry Regiment (Emperor William, King of Prussia's).
- 7th Infantry Regiment (Prince Leopold's).
- 8th Infantry Regiment (General Franck's).
- 9th Infantry Regiment (General Wrede's).
- 10th Infantry Regiment (Prince Louis').
- 11th Infantry Regiment (General von der Tanne).
- 12th Infantry Regiment (Prince Arnulf's).
- 13th Infantry Regiment (Emperor Francis Joseph of Austria's).
- 14th Infantry Regiment (Duke Charles Theodore's).
- 15th Infantry Regiment (King Albert of Saxony's).
- 16th Infantry Regiment (late King Alfonso of Spain's).
- 17th Infantry Regiment (General Orff's).
- 18th Infantry Regiment (Prince Louis Ferdinand's).

There are two different peace establishments on which a German infantry regiment may be—the increased establishment and the normal establishment. On the former establishment are all the regiments of the Prussian Guard (9 in all), and the 17th, 60th, 67th, 97th, 98th, 99th, 105th, 112th, 126th, 130th, 131st, 132nd, 135th, 136th, 137th, and 138th, and the 4th and 8th Bavarian Regiments, all stationed in Alsace and Lorraine, or a total of 27 regiments, of which two, the 17th and 112th, have four and the remainder three battalions each. All other regiments are on the normal establishment.

The strength of a Prussian company on each establishment

PEACE STRENGTH OF PRUSSIAN INFANTRY COMPANY.

Ranks, &c.	Increased Establishment.	Normal Establishment.
Captain	1	1
1st Lieutenant	1	1
2nd Lieutenants	3	2
Total Officers	5	4
Sergeant-major	1	1
Vice-sergeant-major	1	1
Ensign	1	1
Sergeants	4	4
Under-officers	10	7
Drummers and buglers	4	4
Lance-corporals	15	13
Privates.. .. .	130*	109 or 110†
Total N.-O. officers and men, combatants .. }	166	140 or 141
Hospital assistant	1	1
Tradesmen	4	3
Total men, non-combatants ..	5	4
Total N.-C. officers and men.	171	144 or 145
Captain's horse	1	1

* Regiments of 4 battalions have 11 companies with only 129 privates.

† Three companies per battalion have 110 privates, and one has 109; total per battalion 439 privates. Regiments of 4 battalions have 109 privates in all companies.

The strength of a battalion Staff on either establishment is—

Field Officer (Major) commanding	1
2nd Lieutenant as Adjutant	1
Total Officers.. .. .	2
Medical Officers	2
Paymaster	1
Armourer	1
Under-officer as clerk	1
Drum-major (under-officer)	1
Assistant Paymaster (under-officer)	1
Total N.-C. officers and men	3
Officers' horses	3

Consequently the strength of a battalion on each establishment is—

PEACE STRENGTH OF PRUSSIAN INFANTRY BATTALION.

Ranks, &c.	Increased Establishment.	Normal Establishment.
Officers	22	18
Medical Officers	2	2
Officials	2	2
N.-C. officers and men, combatants	667	566
Men, non-combatants	20	16
Total N.-C. officers and men	687	582
Officers' horses.. .. .	7	7

The establishment of a regimental Staff is—

Field Officer (Colonel) commanding	1
Field Officer of Regimental Staff (Lieut.-Colonel)	1
Extra Captain	1
1st Lieutenant as Regimental Adjutant	1
Total Officers	4
Under-officer as clerk	1
Bandsmen (under-officers)	10
Total N.-C. officers	11
Officers' horses	8

Thus the establishments of regiments on the various establishments are:—

PEACE STRENGTH OF PRUSSIAN INFANTRY REGIMENT.

Ranks, &c.	Increased Establishment.		Normal Establishment.	
	Regt. of 3 battns.	Regt. of 4 battns.	Regt. of 3 battns.	Regt. of 4 battns.
Officers	70	92	58	76
Medical Officers	6	8	6	8
Officials	6	8	6	8
N.-C. officers and men, combatants.	2,012	2,668	1,709	2,263
Men, non-combatants	60	80	48	64
Total N.-C. officers and men	2,072	2,748	1,757	2,327
Officers' horses	29	36	29	36

The second regimental Field Officer (*Etatsmässiger Stabs-Offizier*) is second in command of the regiment. In war he

would not march with the regiment, unless called on to command it, but be detached on other duties such as the command of a Reserve Regiment. The extra Captain, usually termed the "Thirteenth Captain," has generally charge of the instruction of the one-year volunteers, who are always supernumerary to the establishment, and has no company to command. This post is generally held by a Major, who, however, draws only Captain's pay, and on mobilisation he would always be detached on other duty, such as the command of a newly-formed battalion (4th Battalion, Reserve Battalion, Landwehr Battalion, or Dépôt Battalion).

To the above establishments there are the following exceptions:—

(a.) The regiments of the Prussian Guard have 48 bandmen each, instead of 10. Eight of these regiments (*i.e.*, all except the Fusilier Guards) have each 3 sergeants extra to look after the stores and keep the lists of the corresponding reserve (Landwehr) regiments to be formed on mobilisation.

(b.) The 109th (1st Baden) Grenadiers has 1 sergeant-major and 4 sergeants extra to look after the stores and keep the lists of the Reserve (Landwehr) Battalions to be formed by this regiment.

(c.) Saxon (100th to 108th, 133rd, 134th, and 139th) Regiments have each 21 men fewer per regiment than the above.

(d.) Württemberg (119th to 126th) Regiments have each 74 men fewer per regiment than the Prussian Regiments.

(e.) Bavarian Regiments have throughout 5 men (privates) per company more than the Prussian Regiments, *i.e.*, 60 men per regiment.

(b.) *War Formation.*

Nothing has been published by German military writers or in German military papers as to the destination on mobilisation of the newly-raised 4th Battalions, but the Germans have hitherto maintained no troops on the peace footing which are not intended to take the field in first line,* they have never been particular as to having all their Army Corps organised exactly alike, and it is not likely that they, whose motto is to be as strong as possible at the decisive point at the earliest possible moment, will deprive themselves of the services in first line of 15 battalions which are as good as any others in the army. For all these reasons, it would appear that German infantry regiments will take the field with three or four battalions as they happen to have them in peace. It is even probable (see Chapter XII) that 4th Battalions will be formed for some of those regiments which have only three in peace, and sent to join them after they have taken the field.

* Except certain units in the field artillery.

The strength of a mobilised company of infantry is as follows:—

WAR STENGTH OF PRUSSIAN INFANTRY COMPANY.

Captain	1
1st Lieutenant	1
2nd Lieutenants	3
<hr/>	
Total Officers	5
Sergeant-major	1
Vice-sergeant-major	1
Sergeants	4
Under-officers	14
Drummers and buglers.. .. .	4
Lance-corporals.. .. .	24
Privates	202
<hr/>	
Total N.-C. officers and men, com- batants	250
Hospital assistant	1
Captain's groom	1
Train drivers	3
<hr/>	
Total non-combatants	5
<hr/>	
Total N.-C. officers and men	255
<hr/>	
Captain's horses	2
Draught horses.. .. .	6
<hr/>	
Total	8
<hr/>	
Two-horsed carriages	3

Of the 14 under-officers, 1 may be an Ensign; and of the 202 privates, 4 are stretcher-bearers, and 2 or 3 may be attached to the band.

The three carriages belonging to a company are an ammunition wagon, a company baggage wagon, and a provision wagon—all two-horsed. This organisation of the transport by companies was only introduced by the "Field Service Regulations" of 1887, and up to that time each company had only a baggage wagon (2-horsed), the ammunition being carried in a 6-horsed wagon attached to the battalion Staff, and two canteen wagons being also attached to the latter. The canteen wagons and the special canteen *personnel* have now been abolished, and thus a number of camp followers got rid of, while each company has been made more complete in itself.

The Staff of a battalion consists of—

Field Officer commanding	1
2nd Lieutenant as Adjutant	1
<hr/>	
Total Officers	2
<hr/>	
Medical Officers	2
Paymaster	1
Armourer.. .. .	1

Under-officer as clerk	1
Drum-major (under-officer)	1
Total N.-C. officers, combatants	2
Officers' servants and grooms	6
Train drivers	2
Total non-combatants	8
Total N.-C. officers and men	10
Officers' horses	8
Draught horses	4
Total horses	12
Two-horsed carriages	2

The senior surgeon of one of the battalions is also regimental surgeon. The two carriages attached to the Staff of a battalion are a battalion baggage wagon and a medical store wagon.

The strength of a battalion is therefore—

Officers	22	} 1,030
Medical Officers	2	
Officials	2	
N.-C. officers and men, combatants	1,002	
Men, non-combatants	28	
Horses	44	
Carriages (2-horsed)	14	

The Staff of a regiment comprises:—

Field Officer commanding	1
1st Lieutenant as Adjutant	1
Total Officers	2
Under-officer as clerk	1
Bandsmen (under-officers)	10*
Total N.-C. officers, combatants	11
Officers' servants and grooms	4
Train drivers	2
Total men, non-combatants	6
Total N.-C. officers and men	17
Officers' horses	10
Draught horses	4
Total horses	14
Two-horsed carriages	2

In the five senior regiments of the Guard the number of bandsmen is 48, and in the above number of horses is included one extra horse for the medical officer acting as regimental surgeon. The two carriages are a regimental baggage wagon and a provision wagon, both 2-horsed.

* Made up to 42 by men detached from the companies.

The strength of a regiment of three battalions is on mobilisation—

Officers	68	
Medical officers	6	
Officials	6	
N.-C. officers and men, combatants ..	3,017	} 3,107
Men, non-combatants	90	
Horses	146	
Carriages (2-horsed)	44	

That of a regiment of four battalions is—

Officers	90	
Medical officers	8	
Officials	8	
N.-C. officers and men, combatants ..	4,019	} 4,137
Men, non-combatants	118	
Horses	190	
Carriages, 2-horsed	58	

After deducting the sergeant-major, vice-sergeant-major, drummers, and buglers, and the two or three men detached to the band who leave their rifles at the dépôt, a company has only 241 or 242 rifles, a battalion 966 or 967, a regiment of 3 battalions, 2,900, and a regiment of four battalions 3,872 rifles. The stretcher-bearers are armed with rifles, and are not protected by the Geneva Cross.

As above mentioned, the regimental transport of the German Infantry is in a transition stage. Formerly a regiment had—

For the Regimental Staff	1 2-horsed baggage wagon.
With each Battalion Staff	1 6-horsed ammunition wagon.
" "	1 4-horsed baggage wagon.
" "	1 2-horsed medical store wagon.
" "	2 2-horsed canteen wagons.
With each company	1 2-horsed baggage wagon.

The canteen wagons have been abolished, and for them provision wagons substituted at the rate of one per company. No pattern was ever laid down for the canteen wagons, which were purchased out of canteen funds by the battalion.

The regimental staff baggage wagon is a four-wheeled wagon opening to the rear with a double door, and beneath the driver's seat are two compartments, one below the foot-board, and the other under the seat. The wagon is driven from the box, and is painted grey, the lettering with the regimental number being white. In it are carried the baggage and working utensils of the regimental staff, the adjutant's books, the regimental books and treasure chest, &c. The length of the wagon with pole is 18 feet 9 inches, the diameter of the wheels is 3 feet 10·8 inches, and their track 4 feet 11·6 inches; the weight of the wagon is 1,210 lbs., and its normal load is 880 lbs.

The old battalion baggage wagon was of much the same pattern as the regimental staff baggage wagon, but longer and heavier, and drawn by four horses, two driven from the box and two ridden by a driver. It contained the baggage of the battalion commander, adjutant, and paymaster, a canteen, the battalion treasure chest and pay-books, the adjutant's books,

armourer's tools, stable utensils, and part of the battalion reserve of clothing. The latter comprised 80 cholera belts, 80 pairs of boots, 40 pairs of canvas boots or shoes, and a certain number of bugles, fifes, and drums. The weight of this wagon was 2,200 lbs., and its normal load 1,870 lbs. The track of the wheels was 4 feet 11·6 inches, the diameter of the fore-wheels 3 feet 10·8 inches, and that of the hind wheels 4 feet 10½ inches. A spare wheel was carried. The Bavarian battalion baggage wagon was similar to the general service wagon of the British Army, but covered with a sheet-iron roof.

This wagon has now been abolished for active troops, though it will probably be retained for reserve troops, &c., and its place taken by a two-horsed wagon of the same construction as that for the regimental staff. The battalion reserve of clothing has been divided among the company baggage wagons in place of the ammunition (three boxes of 960 rounds) which had to be carried in them.

The company baggage wagon (1870 pattern) is of much the same construction as the regimental staff wagon, and is driven from the box. The interior arrangement alone is slightly different. In it are carried the officers' and sergeant-major's baggage, a canteen, 10 blankets for sick men, tailor's and shoemaker's tools, the company and part of the battalion reserve of clothing given above, and 12 tin basins. The total load is 880 lbs. As regards officers' baggage, each Captain is allowed 55 lbs. and each subaltern 46·2 lbs. Their baggage is packed in leather or canvas trunks, the dimensions of which are for Captains, 26·9" × 13·6" × 10·9", and for subalterns 23" × 13·6" × 10·9". The reserve of clothing of a company consists of 10 forage caps, 10 tunics (1 for under-officer), 10 stocks, 10 pairs of cloth trousers, 10 pairs of linen trousers, 20 pairs of drawers, 10 great coats, and 10 shirts.

The medical store wagon (1870 pattern) is almost identical in construction with the company baggage wagon, and carries the baggage of the medical officers of the battalion, 12 blankets, 2 ambulance knapsacks, surgical instruments, medical and bandaging stores, 4 stretchers with 8 carrying straps, a barrel of water, a veterinary canteen, a bag with farrier's tools, and entrenching tools for camp use. It is painted blue, and marked with the Geneva Cross. The large compartment in rear is divided into eight divisions for the various stores, and has two tables which can be drawn out and worked at. On the near side of the driver's box is fixed a Red Cross flag. The stretchers are carried on the top of the wagon.

Nothing has as yet been published as to the new company ammunition wagons. The battalion ammunition wagon formerly in use was of the same construction as an artillery ammunition wagon, painted grey, and provided with a white flag with a black square to mark its position by day, and a green lantern for the same purpose by night. In it were carried 20 boxes, each with 960 rounds of ammunition, 8 in the limber

and 12 in the wagon body, 12 bags for distributing ammunition in the field, part of the large entrenching tools, and stable gear, the total weight of the load being 2,400 lbs. The ammunition boxes are of pine, weigh loaded 105 lbs., and contain 33 packages of 20 cartridges, and 20 of 10 each.

For the provision wagons no patterns have yet been decided on, but it is probable that the old canteen wagons will be used, and that the remainder will be simple ladder-sided wagons. Formerly each battalion was allowed to have with it two or three requisitioned two-horse wagons to carry supplies. The place of these will probably be taken by the new provision wagons.

The regimental transport of infantry is divided into light baggage and heavy baggage. As long as the enemy is distant both may follow the units to which they belong. When the enemy is close, the heavy baggage (*Grosse Bagage*) is collected by Divisions, and follows in rear as directed, while the light baggage (*Kleine Bagage*) follows its unit into action. Light baggage is:—For the regimental staff, 7 led horses; for a battalion, 7 led horses, 1 medical store wagon, 4 company ammunition wagons; for a single company, 1 led horse, 1 ammunition wagon. All other carriages belong to the heavy baggage.

B. RIFLES (JÄGER).

(a.) *Peace Formation.*

There are 21 battalions of rifles, of which—

14 (including two of the Guard) are furnished by Prussia and States administered by her War Ministry,

3 by Saxony,

4 by Bavaria.

Each battalion is divided into four companies, numbered from 1 to 4, and the men are termed *Jäger* (Riflemen), or, in the Guard Sharpshooter Battalion, *Schützen* (Sharpshooters). The following are the titles and numbers of the battalions:—

- Guard Rifle Battalion (*Garde-Jäger-Bataillon*).
- Guard Sharpshooter Battalion (*Garde-Schützen-Bataillon*).
- East Prussian Rifle Battalion, No. 1.
- Pomeranian Rifle Battalion, No. 2.
- Brandenburg Rifle Battalion, No. 3.
- Magdeburg Rifle Battalion, No. 4.
- 1st Silesian Rifle Battalion, No. 5.
- 2nd Silesian Rifle Battalion, No. 6.
- Westphalian Rifle Battalion, No. 7.
- Rhenish Rifle Battalion, No. 8.
- Leuenburg Rifle Battalion, No. 9.
- Hanoverian Rifle Battalion, No. 10.
- Hessian Rifle Battalion, No. 11.
- 1st Saxon Rifle Battalion, No. 12.
- 2nd Saxon Rifle Battalion, No. 13.
- Grand Ducal Mecklenburg Rifle Battalion, No. 14.
- 3rd Saxon Rifle Battalion, No. 15.
- 1st Bavarian Rifle Battalion.
- 2nd Bavarian Rifle Battalion.
- 3rd Bavarian Rifle Battalion.
- 4th Bavarian Rifle Battalion.

The Prussian and Saxon battalions are recruited almost exclusively from the forest *personnel*, but the Bavarian battalions are recruited generally. Battalions of rifles are generally tactically employed in advanced guards, or under circumstances which require individual activity and good shooting. If a battalion has to be detached, a rifle battalion is generally chosen to avoid breaking up a regiment.

The establishment of a company of Prussian rifles is—

PEACE STRENGTH OF PRUSSIAN COMPANY OF RIFLES.

Captain	1
1st Lieutenant	1
2nd Lieutenants	3
Total officers	5
Sergeant-major	1
Vice-sergeant-major	1
Ensign	1
Sergeants	4
Under-officers	7
Buglers	3
Lance-corporals	13
Privates	105 or 106*
Total N.-C. officers and men, combatants	135 or 136
Hospital assistant	1
Tradesmen	3
Total men, non-combatants	4
Total N.-C. Officers and men	139 or 140

The strength of the battalion staff being the same as in the infantry, a bugle-major being substituted for a drum-major, the establishment of a battalion is—

Officers	22
Medical officers	2
Officials	2
N.-C. officers and men, combatants	544
Non-combatants	16
Total N.-C. officers and men	560
Officers' horses	7

A Saxon battalion of rifles has 14 privates fewer, and a Bavarian battalion 22 privates more. The latter have only two 2nd Lieutenants per company, or 18 officers per battalion.

(b.) War Formation.

The war establishment of a battalion of rifles is exactly the same as that of a battalion of infantry, and is therefore—

* Three companies have 105 and one has 106, the total number of privates per battalion being 421.

Officers	..	..	..	..	..	22	
Medical officers	..	..	..	..	..	2	
Officials	..	..	..	..	..	2	
N.-C. officers and men, combatants..	..	..	..	..	..	1,002	} 1,030
Men, non-combatants..	..	..	..	..	..	28	
Horses..	..	..	..	..	..	44	
Carriages (2-horsed) ..	..	..	..	..	..	14	

The band is formed by the buglers. The total number of men armed with rifles is 976.

Formerly the train of a rifle battalion comprised—

- 1 Battalion baggage wagon (2-horsed).
- 1 Medical store wagon (2-horsed).
- 8 Company baggage wagons (2-horsed).
- 2 Canteen wagons (2-horsed).

In each company baggage wagon were carried 5 boxes, each of 960 rounds of ammunition.

All carriages are of the same pattern as in the infantry.

CHAPTER VII.

FIELD TROOPS: CAVALRY.

THE German cavalry consists of 93 regiments, all of 5 squadrons, of which in war 1 is broken up, its cadres forming the dépôt squadron, and 4 take the field. These regiments are furnished by the various States as follows:—

Prussia, &c., 73 regiments, of which—

- 10 Cuirassiers (2 of the Guard),
- 26 Dragoons (2 of the Guard),
- 18 Hussars (1 of the Guard),
- 19 Lancers (3 of the Guard).

Saxony, 6 regiments, of which—

- 2 Heavy cavalry (1 of the Guard),
- 2 Hussars,
- 2 Lancers.

Württemberg, 4 regiments, of which—

- 2 Dragoons,
- 2 Lancers.

Bavaria, 10 regiments, of which—

- 2 Heavy cavalry,
- 2 Lancers,
- 6 Light horse.

The 10 Prussian cuirassier and the two Saxon heavy cavalry regiments are counted as heavy cavalry, the Bavarian so-called "heavy cavalry" and all lancers as medium, and the dragoons, hussars, and Bavarian light horse as light cavalry.

The Prussian Guard cavalry and the Bavarian cavalry have special numbers in each arm, and the Saxon heavy cavalry have no numbers, but all the other regiments are numbered by arms in a series throughout the German Army. The names of the regiments in order of precedence are as follows:—

PRUSSIAN GUARD (*Garde-Cavallerie-Regimenter*):—

Gardes du Corps Regiment (*Regiment der Gardes du Corps*).
 Guard Cuirassier Regiment (*Garde-Cuirassier-Regiment*).
 1st Guard Dragoon Regiment (*Erstes Garde-Drager-Regiment*).
 Guard Hussar Regiment (*Leib-Garde-Husaren-Regiment*).
 1st Guard Lancer Regiment (*Erstes Garde-Ulanen-Regiment*).
 2nd Guard Lancer Regiment.
 2nd Guard Dragoon Regiment.
 3rd Guard Lancer Regiment.

SAXON HEAVY CAVALRY:—

Guard Cavalry Regiment (1st Heavy Regiment) (*Garde-Reiter-Regiment*).
 Carabinier Regiment (2nd Heavy Regiment) (*Carabinier-Regiment*).

CUIRASSIERS (*Cuirassier-Regimenter*).

Royal (*Leib*) Cuirassiers (Silesian), No. 1.
 Queen's Cuirassiers (Pomeranian), No. 2.
 East Prussian (Count Wrangel's) Cuirassiers, No. 3.
 Westphalian Cuirassiers, No. 4.
 West Prussian Cuirassiers, No. 5.
 Brandenburg Cuirassiers (Emperor Nicholas I. of Russia's), No. 6.
 Magdeburg Cuirassiers, No. 7.
 Rhenish Cuirassiers, No. 8.

DRAGOONS (*Drager-Regimenter*).

Prince Albrecht of Prussia's (Lithuanian) Dragoons, No. 1.
 1st Brandenburg Dragoons, No. 2.
 Neumark Dragoons, No. 3.
 1st Silesian Dragoons, No. 4.
 Rhenish Dragoons, No. 5.
 Magdeburg Dragoons, No. 6.
 Westphalian Dragoons, No. 7.
 King Frederick III. Dragoons (2nd Silesian), No. 8.
 1st Hanoverian Dragoons, No. 9.
 East Prussian Dragoons, No. 10.
 Pomeranian Dragoons, No. 11.
 2nd Brandenburg Dragoons, No. 12.
 Schleswig-Holstein Dragoons, No. 13.
 Kurnark Dragoons, No. 14.
 3rd Silesian Dragoons, No. 15.
 2nd Hanoverian Dragoons, No. 16.
 1st Grand Ducal Mecklenburg Dragoons, No. 17.
 2nd Grand Ducal Mecklenburg Dragoons, No. 18.
 Oldenburg Dragoons, No. 19.
 1st Baden Body Guard (*Leib*) Dragoons, No. 20.
 2nd Baden Dragoons, No. 21.
 3rd Baden (Prince Charles') Dragoons, No. 22.
 1st Grand Ducal Hessian Dragoons (Dragoons of the Guard), No. 23.
 2nd Grand Ducal Hessian Dragoons (Duke's Own), No. 24.
 Queen Olga's (1st Württemberg) Dragoons, No. 25.
 2nd Württemberg Dragoons, No. 26.

HUSSARS (*Husaren-Regimenter*):—

- 1st Royal (*Leib*) Hussars, No. 1.
- Empress's 2nd Royal (*Leib*) Hussars, No. 2.
- Brandenburg Hussars (Ziethen's Hussars), No. 3.
- 1st Silesian Hussars, No. 4.
- Pomeranian Hussars (Blücher's Hussars), No. 5.
- 2nd Silesian Hussars, No. 6.
- King William I. Hussars (1st Rhenish), No. 7.
- 1st Westphalian Hussars, No. 8.
- 2nd Rhenish Hussars, No. 9.
- Magdeburg Hussars, No. 10.
- 2nd Westphalian Hussars, No. 11.
- Thuringian Hussars, No. 12.
- 1st Hessian Hussars, No. 13.
- 2nd Hessian Hussars, No. 14.
- Hanoverian Hussars, No. 15.
- Emperor Francis Joseph of Austria and King of Hungary's Hussars (Schleswig-Holstein), No. 16.
- Brunswick Hussars, No. 17.
- 1st Saxon Hussars, No. 18.
- 2nd Saxon Hussars (Emperor Frederick, King of Prussia's), No. 19.

LANCERS (*Ulanen-Regimenter*):—

- Emperor Alexander III. of Russia's Lancers (West Prussian), No. 1.
- Silesian Lancers, No. 2.
- 1st Brandenburg Lancers (Emperor Alexander II. of Russia's), No. 3.
- 1st Pomeranian Lancers, No. 4.
- Westphalian Lancers, No. 5.
- Thuringian Lancers, No. 6.
- Rhenish Lancers, No. 7.
- East Prussian Lancers, No. 8.
- 2nd Pomeranian Lancers, No. 9.
- Posen Lancers, No. 10.
- 2nd Brandenburg Lancers, No. 11.
- Lithuanian Lancers, No. 12.
- 1st Hanoverian Lancers, No. 13.
- 2nd Hanoverian Lancers, No. 14.
- Schleswig-Holstein Lancers, No. 15.
- Altmark Lancers, No. 16.
- 1st Saxon Lancers, No. 17.
- 2nd Saxon Lancers, No. 18.
- King Charles' (1st Württemberg) Lancers, No. 19.
- King William's (2nd Württemberg) Lancers, No. 20.

BAVARIAN CAVALRY:—

- 1st Heavy Cavalry Regiment (Prince Charles of Bavaria's), (*Erstes Schweres-Reiter-Regiment*).
- 2nd Heavy Cavalry Regiment (Crown Prince Archduke Rudolph of Austria's).
- 1st Lancer Regiment (Emperor William II., King of Prussia's).
- 2nd Lancer Regiment (King's).
- 1st Light Horse (*Chevaulegers*) Regiment (Emperor Alexander of Russia's).
- 2nd Light Horse (Prince of Thurn and Taxis').
- 3rd Light Horse (Duke Maximilian's).
- 4th Light Horse (King's).
- 5th Light Horse (Archduke Albrecht of Austria's).
- 6th Light Horse (Grand Duke Constantine Nicolaievitch's).

Most of the regiments have as Honorary Colonels (*Chefs*) members of Royal or princely houses, or General Officers of rank. H.R.H. the Prince of Wales is Honorary Colonel of the 5th Hussars.

With slight variations, which will be noted below, the strength of a squadron of cavalry in peace and war is as follows:—

STRENGTH OF PRUSSIAN SQUADRON OF CAVALRY.

Ranks, &c.	Peace.		War.	
	Men.	Horses.	Men.	Horses.
Captain.. .. .	1	3	1	3
1st Lieutenant.. .. .	1	2	1	3
2nd Lieutenants	2 or 3*	4 or 6	3	9
Total officers	4 or 5	9 or 11	5	15
Sergeant-major	1	1	1	1
Vice-sergeant-major	1	1	1	1
Ensign	1	1	1	1
Sergeants	4	4	4	4
Under-officers	8	8	8	8
Trumpeters	3	3	3	3
Lance-corporals	20	20	20	20
Privates.. .. .	95	95	112	112
Total N.-C. officers, men and horses, } combatants	133	133	150	150
Farrier	1	..	1	1
Hospital assistant	1	..	1	1
Officers' grooms (train soldiers) .. .. .	..	..	5	..
Train drivers .. .. .	..	..	5	10
Tradesmen	4	..	..	..
Total men, non-combatants	6	..	12	12
Total N.-C. officers, men, and troop horses ..	139	133	162	162
Carriages (in war only), 3 .. .. .	..	..	..	..

* 12 for the 5 squadrons.

Each squadron has in peace 4 "*Krümpers*" horses (see Chapter XIX). The three carriages in war are a 4-horsed squadron baggage wagon, a 2-horsed provision wagon, and a 4-horsed forage wagon.

The strength of a regiment of 5 squadrons in peace and of 4 squadrons in war, is as follows:—

STRENGTH OF PRUSSIAN CAVALRY REGIMENT.

Ranks, &c.	Peace (5 squads.).		War (4 squads.).	
	Men.	Horses.	Men.	Horses.
Field Officer in command	1	5	1	5
Field Officer of the Regimental Staff	1	3	1	4
Adjutant (1st or 2nd Lieutenant)	1	2	1	3
Squadron { Captains	5	15	4	12
officers. { 1st Lieutenants	5	10	4	12
{ 2nd Lieutenants	12	24	12	36
Total officers	25	59	23	72
Surgeon-major	1	2	1	2
Assistant Surgeons	1 to 8*	..	2	2
Total medical officers	2 to 4	2	3	4
Chief Veterinary Surgeon	1	..	1	1
Paymaster	1	1	1	2
Armourer	1	..	1	1
Saddler	1	..	1	1
Total officials	4	1	4	5
Trumpet-major	1	1	1	1
Under-officer as clerk .. ..	..	..	1	1
Aspirant Paymaster (under-officer)	1	1	..	..
N.-C. officers, men, and horses for 5 squad- rons in peace and 4 in war. .. }	665	665	600	600
Total N.-C. officers, men, and troop } horses, combatants }	667	667†	602	602
Veterinary Surgeons	4	..	2	2
Officers' grooms (train soldiers) .. ..	..	..	11‡	..
Train drivers .. ..	..	..	5	10
Non-combatants for 5 or 4 squadrons ..	30	..	48	48
Total non-combatants	34	..	66	60
Total N.-C. officers, men, and troop } horses }	701	667†	668	662
Carriages (in war only), 15 .. ..	..	..	..	..

* According to the number of squadrons in detached garrisons.

† Besides 20 "Krümper" horses.

‡ Three for the commanding officer, 2 for the second field officer, and 1 each for the adjutant, medical officers, paymasters, and chief veterinary surgeon.

From a comparison of the peace and war strengths of a regiment, the following conclusions may be drawn. Each squadron has on the peace footing 133 horses, among which are 12 young remounts. The total number of effective horses is therefore 121 per squadron, or 605 per regiment. If from these be deducted 50 old or sick horses, and 15 required to mount the non-commissioned officers of the dépôt squadron, there remain

540 horses of the four field squadrons, or an average of 135 horses per squadron. As a matter of fact, in 1870 (see Chapter XX) some cavalry regiments did take the field on the first and second day of mobilisation, and the conviction is therefore forced upon us that the German cavalry on the frontiers could be in the field on the day after the orders for mobilisation were issued, with squadrons numbering 135 effective horses.

The war establishment for all regiments, except the Gardes du Corps, is the same. On the peace footing, the following exceptions are to be noted:—

1st. The Prussian Gardes du Corps Regiment is organised in 10 troops and has 3 Field Officers, 11 Captains, and 21 Lieutenants, with 86 officers' horses. It has also 5 non-commissioned officers (troop sergeant-majors), a kettle-drummer, and 5 trumpeters (giving 2 per troop) more than other Prussian regiments, and also an assistant veterinary surgeon per troop. It has 11 troop horses additional.

2nd. The Saxon regiments have 1 private and 1 horse per squadron more than the above establishment.

3rd. The Württemberg regiments have 14 men and 14 horses per regiment fewer than the above.

4th. The Bavarian regiments have 1 private and 1 horse per squadron fewer than above, and have only 2 assistant veterinary surgeons per regiment.

The regimental transport of a cavalry regiment consists of—

- 1 four-horsed baggage wagon for the regimental staff,
- 1 two-horsed medical store cart,
- 1 four-horsed forage wagon,

which, together with the 12 squadron carriages, gives a total of 5 two-horsed and 10 four-horsed carriages, with 50 draught horses and 25 transport drivers. It will be noticed that no small-arm ammunition carts form part of the regimental transport. In an independent cavalry division, two ammunition wagons are attached to the artillery of the division, and carry a total of 30,720 cartridges, or 10 to 15 rounds per carbine, and also 3,348 revolver cartridges. For regiments attached to infantry divisions, the infantry ammunition columns carry 63,360 rounds per army corps, or 60 rounds per carbine. The cavalry divisions may also draw upon this reserve. The transport carriages are of much the same type as those of the infantry, detailed in Chapter VI. The staff baggage wagon is the same as an old pattern battalion baggage wagon for Prussian and Bavarian infantry respectively. As in the infantry, in it are carried the baggage of the field officers, the adjutant, and the paymaster, the regimental treasure chest and books, a reserve of clothing, a small box of armourer's tools, and line gear for the staff horses. The medical cart is exactly the same as in the infantry. The squadron baggage wagon is similar

to the wagon for the staff of an infantry regiment, but is differently arranged inside, and carries a forge in rear. In it are placed the officers' baggage, veterinary stores and instruments, tailors', saddlers', and shoemakers' stores and tools, 6 blankets for sick men, part of the reserve of clothing (80 cholera belts, 24 pairs of knee boots, 16 pairs of Wellington boots, 13 trumpets, and 4 to 5 per cent. of the other articles considered most likely to wear out, the choice of which is left to Commanding Officers), cavalry pioneers' tools (see Chapter XVI) on the line of march, the driver's kit and three days' forage, and the line gear for the draught horses. The normal load is 875 lbs. It is painted grey, with the lettering in white. The provision and forage wagons will probably be simple ladder-sided wagons, but no details have been published. In the cavalry all wagons belong to the "heavy baggage," only led horses being "light baggage." The ammunition wagons attached to the cavalry divisions are much the same as the old pattern infantry ammunition wagons. Under the lid of the limber are three compartments for small stores, and underneath these are two compartments, with doors opening to the rear for ammunition. The wagon body is also divided into three compartments, with doors to the rear, the outer ones for ammunition, the centre one for tools for destroying railways (see Chapter XVI). In rear of and underneath the wagon is an iron box, with 16 gun-cotton discs. Each wagon carries 15,360 carbine and 1,674 revolver cartridges, 56 gun-cotton discs, and 50 primers, and weighs when empty 3,506 lbs.

CHAPTER VIII.

FIELD TROOPS: FIELD ARTILLERY.

A. PEACE FORMATION.

THE German Field Artillery consists of 37 regiments, 17 of which comprise both horse and field batteries, the remaining 20 having field batteries only. The designations of these regiments are as follows:—

- 1st Guard Field Artillery Regiment.
- 2nd Guard Field Artillery Regiment.
- East Prussian Field Artillery Regiment, No. 1.
- 1st Pomeranian Field Artillery Regiment, No. 2.
- 1st Brandenburg Field Artillery Regiment, No. 3.
- (Captain-General of Ordnance's.)
- Magdeburg Field Artillery Regiment, No. 4.
- Lower Silesian Field Artillery Regiment, No. 5.
- Silesian Field Artillery Regiment, No. 6.
- 1st Westphalian Field Artillery Regiment, No. 7.
- 1st Rhinish Field Artillery Regiment, No. 8.

Schleswig Field Artillery Regiment, No. 9.
 1st Hanoverian Field Artillery Regiment, No. 10.
 Hessian Field Artillery Regiment, No. 11.
 1st Saxon Field Artillery Regiment, No. 12.
 1st Württemberg Field Artillery Regiment, No. 13.
 1st Baden Field Artillery Regiment, No. 14.
 Field Artillery Regiment, No. 15.
 West Prussian Field Artillery Regiment, No. 16.
 2nd Pomeranian Field Artillery Regiment, No. 17.
 2nd Brandenburg Field Artillery Regiment, No. 18.
 (Captain-General of Ordnance's.)
 Thuringian Field Artillery Regiment, No. 19.
 Posen Field Artillery Regiment, No. 20.
 Upper Silesian Field Artillery Regiment, No. 21.
 2nd Westphalian Field Artillery Regiment, No. 22.
 2nd Rhenish Field Artillery Regiment, No. 23.
 Holstein Field Artillery Regiment, No. 24.
 Grand Ducal Hessian Field Artillery Regiment, No. 25.
 2nd Hanoverian Field Artillery Regiment, No. 26.
 Nassau Field Artillery Regiment, No. 27.
 2nd Saxon Field Artillery Regiment, No. 28.
 2nd Württemberg Field Artillery Regiment, No. 29.
 2nd Baden Field Artillery Regiment, No. 30.
 Field Artillery Regiment, No. 31.
 1st Bavarian Field Artillery Regiment (Prince-Regent Luitpold's).
 2nd Bavarian Field Artillery Regiment (General Horn's).
 3rd Bavarian Field Artillery Regiment (Queen-Mother's).
 4th Bavarian Field Artillery Regiment (The King's).

The field artillery attached to each Army Corps is formed into a field artillery brigade, which bears the number of the Army Corps, and these brigades are composed as follows :—

Guard, 1st and 2nd Guard Regiments.	X. 10th and 26th Regiments.
I. 1st and 16th Regiments.	XI. 11th, 25th, and 27th Regiments.
II. 2nd and 17th "	XII. 12th and 28th Regiments.
III. 3rd and 18th "	XIII. 13th and 29th "
IV. 4th and 19th "	XIV. 14th and 30th "
V. 5th and 20th "	XV. 15th and 31st "
VI. 6th and 21st "	1st Bavarian. 1st and 3rd Bavarian
VII. 7th and 22nd "	Regiments.
VIII. 8th and 23rd "	2nd " 2nd and 4th Bavarian
IX. 9th and 24th "	Regiments.

A regiment of field artillery is organised in *Abtheilungen*, or groups of three or four batteries under a field officer. These *Abtheilungen* are units as independent of one another as are the battalions of an infantry regiment, both tactically and administratively, and each has its own adjutant and paymaster. With the exception of the 25th Regiment, which has only two, all the regiments have three *Abtheilungen*, but the composition of the latter varies.

The 1st Guard, 1st to 12th, and 2nd and 3rd Bavarian Regiments, have each three *Abtheilungen*, two of four field batteries each, and one of three horse artillery batteries. The batteries of the 1st *Abtheilung* are numbered 1, 2, 3, and 7, those of the 2nd, 4, 5, 6, and 8, while those of the horse *Abtheilung* are named 1st, 2nd, and 3rd horse (*Reitende*) batteries.

The 2nd Guard, 13th, 15th to 24th, 26th, 27th, 29th, 30th, 31st, and 1st and 4th Bavarian Regiments, have each three

Abtheilungen of three field batteries each, the 1st *Abtheilung* comprising the 1st, 2nd, and 3rd, the 2nd, the 4th, 5th, and 6th, and the 3rd, the 7th, 8th, and 9th batteries.

The 14th Regiment has three *Abtheilungen*, the 1st and 2nd comprising each three field batteries, numbered from 1 to 6, and the 3rd two (7th and 8th) field batteries, and a horse battery without a number.

The 25th Regiment has two *Abtheilungen*, the 1st comprising three (1st to 3rd) field batteries, and the 2nd three (4th to 6th) field batteries and a horse battery without a number.

Finally, the 28th Regiment has three *Abtheilungen*, each of 4 field batteries, the 1st comprising the 1st to 4th, the 2nd, the 5th to 8th, and the 3rd, the 9th to 12th batteries.

Thus the 37 regiments comprise in all 110 *Abtheilungen*, of which—

33 of 4 field batteries,	
60 " 3 field batteries,	
1 " 2 field and 1 horse batteries,	
1 " 3 field and 1 horse batteries,	
15 " 3 horse batteries,	

giving a total of 317 field and 47 horse batteries, or 364 in all.

These batteries are not all of the same strength, as a certain number of the batteries stationed near the western and eastern frontiers have six guns horsed in peace, while the remainder have only four. Six horse and 35 field batteries have thus an increased establishment; they are the following:—

I Army Corps.—1st <i>Abtheilung</i> ,	1st Regiment* ..	3 batteries.
2nd "	16th " ..	3 "
II Army Corps.—2nd "	17th " ..	3 "
VIII Army Corps.—1st*	8th " ..	3 "
XIII Army Corps.—3rd "	18th Regiment ..	3 "
3rd "	29th " ..	3 "
XIV Army Corps.—3rd "	14th " ..	2 "
2nd "	30th " ..	3 "
XV Army Corps.—1st and 2nd <i>Abtheilungen</i> ,	15th Regiment..	6 "
1st and 2nd "	31st " ..	6 "
Total field batteries ..		35 "
<hr/>		
VIII Army Corps.—Horse <i>Abtheilung</i> ,	8th Regiment ..	3 "
XI Army Corps.—Horse battery,	25th " ..	1 "
XII Army Corps.—1 horse battery,	12th " ..	1 "
XIV Army Corps.—Horse battery,	14th " ..	1 "
Total horse batteries ..		6 "

Thus the total number of field guns horsed in time of peace is—

35 field batteries of 6 guns	=	210 guns
282 " " " 4 " "	=	1,128 "
6 horse " " 6 " "	=	36 "
41 " " " 4 " "	=	164 "
Total		1,538 "

* The fourth (7th) battery has only 4 guns.

The peace establishments of batteries of the various types above are—

PEACE STRENGTH OF PRUSSIAN FIELD BATTERY.

Ranks, &c.	6-Gun Field Battery.	4-Gun Field Battery.	6-Gun Horse Battery.	4-Gun Horse Battery.
Captain	1	1	1	1
1st Lieutenant	1	1	1	1
2nd Lieutenants	2	2	2	2
Total officers	4	4	4	4
Sergeant-major	1	1	1	1
Vice-sergeant-major	1	1	1	1
Ensign	1	1	..	..
Sergeants	4	4	4	4
Under-officers	10	10	10	8
Trumpeters	2	2	2	2
Bombardiers (<i>Ober Gefreite</i>)	4	4	4	4
Acting bombardiers (<i>Gefreite</i>)	7	7	8	8
Gunners	81	69	82	62
(of whom drivers)	(80)	(23)	(21)	(14)
Total N.-C. officers and men, } combatants	111	99	113	90
Hospital assistant	1	1	1	1
Veterinary Surgeon (Subordinate official)	..	..	1*	1*
Tradesmen	3	3	3	3
Total non-combatants	4	4	5	5
Total N.-C. officers and men	115	103	118	95
Horses, riding, officers'	1	1	9	9
" troop	18	16	64	48
Horses, draught, lead and centre	24	16	24	16
" wheel	12	8	12	8
Horses, spare	6	4	6	4
Total horses	61	45	115	85

* Not in all batteries.

Each field battery has, in addition to the above, three, and each horse battery four "*Krümper*" horses.

The Guard batteries have each 1 trumpeter and 1 riding horse additional to the above, the Saxon field batteries have 1 gunner fewer, the Württemberg batteries on the 4-gun establishment 1 under-officer and 4 gunners fewer, and the Bavarian field batteries 1 gunner more than the above.

As regards the figures for officers' horses, it must be remarked that in the Prussian, Saxon, and Württemberg field batteries, the captains alone have a charger (*Chargen-Pferd*), the lieutenants being mounted, as in the British Army, on

troop horses, but in the Bavarian field artillery the lieutenants are each allowed a charger. As, however, in the latter, the number of troop horses is correspondingly diminished, the total numbers are not altered. In all horse artillery batteries the captain has three and each lieutenant two chargers. Further details are given in Chapter XIX.

The *Abtheilungen* are therefore of varying strengths according as their batteries are on the 6-gun or 4-gun establishment. The staff of a field *Abtheilung* is composed of 1 major commanding, 1 2nd lieutenant as adjutant, 2 under-officers as clerks, 1 medical officer, 1 paymaster, and 1 chief veterinary surgeon, with 4 riding horses, while that of a horse *Abtheilung* comprises 2 officers, 2 under-officers, 1 medical officer, and 1 paymaster as above, but no veterinary surgeon, as these are attached to batteries, and 5 riding horses. The strengths of *Abtheilungen* on the various establishments are therefore as follows:—

PEACE STRENGTH OF ABTHEILUNGEN OF FIELD ARTILLERY ON VARIOUS ESTABLISHMENTS.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Horses.*	
				Combatants.	Non-Combatants.	Riding.	Draught.
1st <i>Abtheilung</i> , 1st and 8th Regiments (each three 6-gun, one 4-gun batteries) ..	18	1	2	434	16	78	154
<i>Abtheilung</i> of 4 field batteries of 4 guns each.. ..	18	1	2	398	16	68	112
<i>Abtheilung</i> of 3 field batteries of 6 guns each.. ..	14	1	2	385	13	61	126
<i>Abtheilung</i> of 3 field batteries of 4 guns each.. ..	14	1	2	299	12	55	84
<i>Abtheilung</i> of 3 horse batteries of 6 guns each.. ..	14	1	4	341	12	224	128
<i>Abtheilung</i> of 3 horse batteries of 4 guns each.. ..	14	1	4	272	12	176	84
Horse <i>Abtheilung</i> , 12th Regiment (one 6-gun and two 4-gun batteries) ..	14	1	4	295	12	192	98
2nd <i>Abtheilung</i> , 25th Regiment (three 4-gun field and one 6-gun horse batteries)	18	1	3	412	16	128	126
3rd <i>Abtheilung</i> , 14th Regiment (two 6-gun field and one 6-gun horse batteries) ..	14	1	3	347	12	115	126

* Excluding "Krümpers" horses.

The staff of a regiment consists of 1 colonel or lieutenant-colonel commanding, 1 field officer (lieutenant-colonel generally); for staff duties, 1 1st or 2nd lieutenant as regimental adjutant, 2 under-officers as clerks, 1 or 2 medical officers, 3 master armourers, and 9 riding horses.

It is unnecessary to enter into the details of the composition of all regiments, as has been done above for the *Abtheilungen*, but below are shown the strengths of—

(a.) A regiment of 2 *Abtheilungen* of 4 field batteries, and 1 *Abtheilung* of 3 horse batteries, all of 4 guns.

(b.) A regiment of 3 *Abtheilungen* of 3 field batteries, all of 4 guns.

(c.) A regiment of 2 *Abtheilungen* of 3 field batteries of 6 guns, and 1 *Abtheilung* of 3 field batteries of 4 guns.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Horses.	
				Combatants.	Non-Combatants.	Riding.	Draught.
(a) ..	53	5	11	1,070	44	329	308
(b) ..	45	4	9	899	36	174	252
(c) ..	45	4	9	971	36	267	336

To (a) correspond the 1st Guard, 2nd to 7th, 9th, 10th, 11th, and 2nd and 3rd Bavarian Regiments, to (b), the 2nd Guard, 18th to 24th, 26th, 27th, and 1st and 4th Bavarian Regiments, and to (c) the 15th and 31st Regiments, with the exceptions noted above for the Bavarian Regiments. The strength of the remaining 11 regiments varies greatly from the above, but can be easily calculated.

The total strength of the field artillery on the peace footing is given in Appendix III, but it is to be noted that in this, the budgetary strength of the troops, the officers' chargers are not included.

B. WAR FORMATION.

Since the recent reorganisation of the artillery on 1st April, 1887, nothing has been published which gives any definite rules as to the war formation of the field artillery. The "Field Service Regulations" of 23rd May, 1887, however, lay down at page 19 that an infantry division comprises a *regiment* of field artillery, and that an army corps will have a corps artillery, without however laying down the exact composition of either the divisional regiments or the corps artillery. There has, however, been lately a great tendency in German military circles in the direction of the advisability of increasing the artillery with the divisions, and diminishing that forming the corps artillery. French writers of recent date seem to assume that extra batteries will be formed on mobilisation for the field

army, but, on the other hand, it is known to be a first principle of German military organisation that the troops taking the field in first line are those already existing in peace, and this supposition, it appears, should therefore be rejected for the field army. It will be noticed that the fourth batteries in the 1st and 2nd *Abtheilungen* of the 1st Guard, 1st to 12th, and 2nd and 3rd Bavarian regiments are numbered 7th and 8th, and it is known that these batteries would be expanded on mobilisation into reserve and depôt batteries, and it therefore appears probable that all the *Abtheilungen* will take the field with three batteries only.

An army corps will therefore have normally :—

1st Division.—2 *Abtheilungen*, of 3 batteries each, of one of the regiments of the corps.

2nd Division.—2 *Abtheilungen*, of 3 batteries each, of the other regiment of the corps.

Corps Artillery.—The 3rd (field) *Abtheilung* of one regiment, and such batteries of the horse *Abtheilung* of the other regiment as are not attached to cavalry divisions (as a rule, two), or (in the 13th, 14th, and 15th Corps) the 3rd Field *Abtheilung* of that regiment.

Thus an army corps will have 17 or 18 batteries, 102 to 108 guns, or over 4 per 1,000 infantry.

For the 12th Corps, a special re-grouping of the batteries will be required if each division is to have 2 *Abtheilungen* of 3 batteries, as all its field *Abtheilungen* have 4 batteries. Possibly an *Abtheilung* of 4 batteries may be attached to each division, and 2 *Abtheilungen* of 3 field batteries each (their fourth being expanded into reserve batteries for the reserve division) and the remainder of the horse *Abtheilung* will form the Corps Artillery.

If a 16th Corps is formed out of the 25th and 33rd Divisions, fresh batteries will have to be created for the 33rd Division and Corps Artillery, but as the 15th Corps will not for some time to come be able to furnish a reserve division (see Chapter XII), its artillery regiments will probably be able to furnish the extra batteries required.

For each army corps there would be mobilised 2* *Abtheilungen* of ammunition columns, 1 by each regiment of the corps, each consisting of 3 artillery and 2 infantry ammunition columns.

The following table gives the war strengths of field and horse batteries, and artillery and infantry ammunition columns :—

* Three in the 12th Corps.

WAR STRENGTH OF BATTERIES AND AMMUNITION COLUMNS.

Ranks, &c.	Field Battery.	Horse Battery.	Artillery Ammn. Column	Infantry Ammn. Column.
Captain	1	1	1	1
1st Lieutenant	1	1	} 2	2
2nd Lieutenants	3	3		
Total officers	5	5	3	3
Saddlers.. .. .	1	2	1	1
Sergeant-major.. .. .	1	1	1	1
Sergeant-major artificer .. .. .	..	..	1	1
Vice-sergeant-major	1	1	1	1
Sergeants	4	4	4	4
Under-officers	9	8	7	7
Trumpeters	3	3	2	2
Bombardiers .. .. .	..	..	3	3
Mounted acting bombardiers.. .. .	..	..	3	3
Dismounted acting bombardiers .. .. .	..	..	5	5
Gunners	48	42	23	26
Reserve gunners	28	38	37	34
Drivers (artillery)	68	57	..	..
Drivers (train).. .. .	..	..	79	74
Drivers (reserve train).. .. .	..	..	6	6
Total N.-C. officers and men, combatants	162	154	172	167
Hospital assistant	1	1	1	1
Farrier	1	1	1	1
Train drivers	1	3	1	1
Officers' grooms (train soldiers)	5	5	4	4
Total non-combatants	8	10	7	7
Total N.-C. officers and men	170	164	179	174
Horses:—Officers' riding	11	15	4	4
Troop riding	19	101	23	23
Draught	108	108	150	140
Spare	10	6	8	8
Transport	2	6	2	2
Total	150	236	187	177
Guns	6	6	..	..
Artillery carriages:—4-horsed .. .. .	..	..	3	2
6-horsed	12	12	23	22
Transport carriages	1	2	1	1
Total carriages	19	20	27	25

One of the under-officers in each field and horse battery may be an ensign. Of the gunners and drivers in each, 6 are bombardiers, and 9 acting bombardiers. The sergeant-major artificer in an ammunition column acts as an officer, and is allowed a groom (train soldier). A two-horsed provision wagon is attached to each battery or column, and a four-horsed forage wagon in addition to each horse battery.

The staffs of *Abtheilungen* are composed as follows:—

Ranks, &c.	<i>Abtheilung</i> of Batteries.	<i>Abtheilung</i> of Columns.
Field Officer (Major) commanding	1	1
2nd Lieutenant as Adjutant	1	1
Total officers	2	2
Medical officers	2	2
Paymaster	1	..
Under-officer as clerk	1	1
Sergeant-artificer .. ..	..	1
Trumpet-major	1	1
Total N.-C. officers and men, combatants	2	3
Officers', &c., grooms (train soldiers) ..	7	6
Veterinary Surgeons	2	2
Train driver	1	1
Total non-combatants	10	9
Total N.-C. officers and men	12	12
Horses:—Riding, officers', &c.	8	8
" troop	4	4
Draught	2	2
Total horses	14	14
Two-horsed baggage wagon	1	1

The war establishments of the *Abtheilungen* of each description would therefore be—

WAR STRENGTH OF ABTHEILUNGEN OF FIELD ARTILLERY AND AMMUNITION COLUMNS.

FIELD TROOPS: FIELD ARTILLERY.

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Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Horses.	Guns.	Other Carriages.
				Combatant.	Non-Combatant.			
<i>Field Abtheilung of 3 batteries—</i>								
Staff.. ..	2	2	1	2	10	14	..	1
3 Batteries.. ..	15	..	3	486	24	450	18	39
Total	17	2	4	488	34	464	18	40
<i>Field Abtheilung of 4 batteries—</i>								
Staff.. ..	2	2	1	2	10	14	..	1
4 Batteries.. ..	20	..	4	648	32	600	24	52
Total	22	2	5	650	42	614	24	53
<i>Horse Abtheilung of 2 batteries—</i>								
Staff.. ..	2	2	1	2	10	14	..	1
2 Batteries.. ..	10	..	4	308	20	472	12	28
Total	12	2	5	310	30	486	12	29
<i>Column Abtheilung—</i>								
Staff.. ..	2	2	..	3	9	14	..	1
3 Artillery columns	9	..	3	516	21	561	..	81
2 Infantry columns	6	..	2	334	14	354	..	50
Total	17	2	5	853	44	929	..	132

The staff of a regiment is composed of:—

Field officer commanding	1
1st Lieutenant, as Adjutant.. .. .	1
Total officers	2
Medical officer.. .. .	1
Chief Veterinary Surgeon	1
Under-officer as clerk.. .. .	1
Trumpet-Major	1
Gunner artificer	1
Total N.C.-officers and men, combatants.. .. .	3
Officers' grooms, &c.	7
Train driver	1
Total men, non-combatants	8
Horses—	
Officers' riding	11
Troop riding	1
Draught	2
Total horses	14
2-horsed baggage wagon	1

A similar staff would have to be mobilised for the Corps Artillery, of which one of the "field officers of the regimental staff" in peace would probably take command. The war strengths of regiments and of the Corps Artillery will therefore be probably as follows:—

PROBABLE WAR STRENGTH OF REGIMENTS OF FIELD ARTILLERY AND CORPS ARTILLERY.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Horses.	Guns.	Other Carriages.
				Combatant.	Non- Combatant.			
Regiment attached to a Division—								
Staff.. ..	2	1	1	3	8	14	..	1
2 <i>Abtheilungen</i> of 3 field batteries	34	4	8	976	68	928	86	80
Total	36	5	9	979	76	942	86	81
Corps Artillery—								
Staff.. ..	2	1	1	3	8	14	..	1
1 <i>Abtheilung</i> of 3 field batteries ..	17	2	4	488	34	464	18	40
1 <i>Abtheilung</i> of 2 horse batteries	12	2	5	310	30	486	12	29
2 <i>Abtheilungen</i> of columns ..	34	4	10	1,706	88	1,858	..	264
Total	65	9	20	2,607	160	2,822	20	334

All field batteries have the same number of carriages, viz. :—

6 guns.	} All 6-horsed.
8 ammunition wagons.	
3 battery store wagons.	
1 field forge.	
1 provision wagon, 2-horsed.	
<hr/>	
19 carriages.	

Horse batteries have in addition a 4-horsed forage wagon. Each carries on its carriages 29 shovels, 18 pickaxes, 14 axes, and 36 hatchets.

An artillery ammunition column is composed of—

20 ammunition wagons.	} 6-horsed,
2 battery store wagons.	
1 field forge.	
3 spare gun-carriages, 4-horsed,	
1 provision wagon, 2-horsed,	
<hr/>	
27 carriages,	

and carries on them 48 shovels, 26 pickaxes, 4 axes, and 52 hatchets.

An infantry ammunition column comprises—

21 small-arm ammunition wagons.	} 6-horsed,
1 field forge.	
2 battery store wagons, 4-horsed,	
1 provision wagon, 2-horsed,	
<hr/>	
25 carriages,	

and carries on them 23 shovels, 23 pickaxes, 2 axes, and 48 hatchets.

The staffs of regiments and *Abtheilungen* of batteries and columns have each a 2-horsed baggage wagon.

All these artillery carriages with their packing, as well as all material, are described in Chapter XVII. The provision and forage wagons are the same as in the cavalry.

On mobilisation, the batteries taking the field in first line detach each about 10 to 15 non-commissioned officers and men to form cadres for these formations, such as ammunition columns and *depôts*, for which no cadres are maintained in peace, and also if necessary send to the *depôts* all soldiers under three months' service in field and six months' in horse batteries, the war strength being then attained by calling in men from the reserve. Horses are never handed over to these formations except such as are too young or too old for active service.

The ammunition columns receive their gunners from the

reserve of the artillery, but most of their drivers would be drawn from the reserve of the cavalry.

Artillery officers (active, reserve, or Landwehr) are only placed in the batteries, regimental and *Abtheilung* staffs, and in the artillery ammunition columns. For the latter one officer only need belong to the artillery. The remainder of the officers would be generally obtained from the reserve of the cavalry.

CHAPTER IX.

FIELD TROOPS: FOOT ARTILLERY.

A. PEACE FORMATION.

THE Foot Artillery was in 1872, as a provisional measure, and definitely in 1874, separated absolutely from the Field Artillery, and this re-organisation was crowned in 1887 by the appointment of separate Inspectors-General of Field and Foot Artillery.

The Foot Artillery comprises in peace 31 battalions of 4 companies, of which 28 battalions are formed into 14 regiments of 2 battalions each, and 3 battalions are independent. The companies are numbered from 1 to 8 or from 1 to 4 in the regiments and battalions respectively. The following are the titles and numbers of the regiments and battalions:—

Guard Foot Artillery Regiment.
 East Prussian Foot Artillery Regiment, No. 1.
 Pomeranian Foot Artillery Regiment, No. 2.
 Brandenburg Foot Artillery Regiment, No. 3 (*General-Feldzeugmeister's**).
 Magdeburg Foot Artillery Regiment, No. 4.
 Lower Silesian Foot Artillery Regiment, No. 5.
 Silesian Foot Artillery Regiment, No. 6.
 Westphalian Foot Artillery Regiment, No. 7.
 Rhenish Foot Artillery Regiment, No. 8.
 Schleswig Foot Artillery Battalion, No. 9.
 Foot Artillery Regiment, No. 10.
 Foot Artillery Regiment, No. 11.
 Saxon Foot Artillery Regiment, No. 12.
 Württemberg Foot Artillery Battalion, No. 13.
 Baden Foot Artillery Battalion, No. 14.
 1st Bavarian Foot Artillery Regiment (*late General Bothmer's*).
 2nd Bavarian Foot Artillery Regiment.

With the exception of the 10th and 11th Regiments, the regiments and battalions† belong to the Army Corps whose number they bear, and are recruited from its district. The 10th Regiment belongs to the 15th Army Corps; its 1st Battalion is

* The post of *General-Feldzeugmeister*, or Captain-General of the Ordnance, is not now held by anybody.

† From 1st October, 1888, the 3rd regiment and 9th Schleswig battalion will belong to the 11th and 7th Army Corps respectively.

called Hanoverian and its 2nd Hessian, and they are recruited from the 10th and 11th Corps districts. These battalions formerly (till 1881) belonged to those corps and bore their numbers. The 11th Regiment, raised in 1881, is attached to the 2nd Army Corps. For administrative and instructional purposes, and for purposes of promotion among the officers, the 9th Battalion is attached to the 7th Regiment and the 14th to the 10th Regiment, although the latter battalion still remains an integral part of the Baden contingent. All the foot artillery are stationed in fortresses, and this has led to many of the regiments being stationed outside their Army Corps districts. Thus the 3rd Regiment is at Mainz (11th Corps), the 2nd Battalion 4th Regiment in Ehrenbreitstein (8th Corps), the 1st Battalion 6th Regiment at Glogau (5th Corps), the 7th Regiment and 9th Battalion at Cologne (8th Corps), and the 8th, 12th, and 1st Battalion 2nd Bavarian Regiments at Metz (15th Corps).

Of the 31 battalions, 10, those of the Guard, 8th, 10th, 11th, and 12th Regiments, are on the so-called increased peace footing and the remaining 21 are on the normal peace footing. The strength of a company on each footing is—

PEACE STRENGTH OF PRUSSIAN FOOT ARTILLERY COMPANY.

Ranks, &c.	Increased footing.	Normal footing.
Captain	1	1
1st Lieutenant	1	1
2nd Lieutenants	2	2
Total officers	4	4
Sergeant-major	1	1
Sergeant-major artificers (<i>Oberfeuerwerker</i>)	1 to 2	1 to 2
Vice-sergeant-major	1	1
Ensign	1	1
Sergeants	4	4
Sergeant-artificers (<i>Feuerwerker</i>)	3 to 4	3 to 4
Under-officers	13	11
Bombardiers (<i>Ober-Gefreite</i>)	10	10
Acting bombardiers (<i>Gefreite</i>)	13	13
Buglers	2	2
Gunners	98	70
Total N.-C. officers and men, combatants	147 to 149	117 to 119
Hospital assistant	1	1
Tradesmen	4	3
Total N.-C. officers and men, non-combatants	5	4
Total N.-C. officers and men	152 to 154	121 to 123

Of the officers of a foot artillery company, the Captain alone is mounted in peace, and he is only allowed forage for one horse. The 12th (Saxon) Regiment has 1 or 2 gunners (10 in the regiment), the 13th (Württemberg) Battalion 7 gunners per company, and the 1st and 2nd Bavarian Regiments 2 or 3 gunners per company (38 for the two regiments) fewer than the above strengths, which are those for the Prussian Companies.

The staff of a battalion consists of a field officer in command (2 forage rations), a 2nd lieutenant as adjutant (1 forage ration), a medical officer, a paymaster, an armourer, and an under-officer as clerk. Each has also about 2 2nd lieutenants supernumerary to its establishment who have not passed through the Artillery and Engineer School.

The staff of a regiment comprises a field officer commanding (3 forage rations), a field officer for staff duties (2 forage rations), a 2nd lieutenant as regimental adjutant (1 forage ration), a bandmaster (*Stabs-Hornist*), 12 bugle-bandsmen (*Hornisten*), 3 under-officers as clerks and store keepers, and 32 tradesmen in the regiments on the increased, and 24 in those on the normal footing. Each regiment has also 2 or 3 Captains (4 in the 10th Regiment) supernumerary to its establishment, who are employed as artillery officers of fortresses, commandants of artillery depôts, adjutants to the Inspector-General, &c., who are not, in consequence, seconded. Field officers employed outside their regiments, captains employed in the manufacturing and educational establishments, and all lieutenants employed outside their regiments are seconded. The tradesmen belonging to the regimental staffs are quite distinct from those attached to companies. The latter are armed and equipped like other soldiers, and only carry out small repairs to clothing and equipment, while the former only receive a very summary training of three weeks or so, and have only side-arms. They are employed in the regimental workshops.

The strength of the various Prussian units in peace is therefore as follows:—

		Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Officers' Horses.
					Com- batants.	Non- com- batants.	
Batta- lion.	Increased strength.	20	1	2	594	20	7
	Normal strength. . .	20	1	2	474	16	7
Regi- ment.	Increased strength.	46	2	4	1,204	72	20
	Normal strength. . .	45	2	4	964	56	20

As above mentioned, the 12th Regiment has 10 combatants fewer than the Prussian regiments on the increased strength,

the 13th Battalion 28 combatants fewer and 1 officer more than a battalion on the normal strength, and the 2 Bavarian regiments together 38 men fewer than 2 Prussian regiments.

B. WAR FORMATION.

Each regiment or battalion is mobilised as it stands, a certain number of officers and non-commissioned officers only being given over to the Landwehr battalions and dépôts, and a park company being formed by each battalion. A mobilised company would comprise:—

WAR STRENGTH OF PRUSSIAN FOOT ARTILLERY COMPANY.

Captain	1
1st Lieutenant	1
2nd Lieutenants	2
Total officers	4
Sergeant-major	1
Sergeants	4
Under-officers	14
Sergeant-artificer	1
Bombardiers	10
Acting bombardiers	13
Buglers	2
Gunners	160
Total N.-C. officers and men, combatants	205
Hospital assistant	1
Captain's groom (train soldier)	1
Train drivers	2
Total non-combatants	4
Total N.-C. officers and men	209
Officers' horses	6
Draught horses	4
Total horses	10
Two-horsed company baggage wagon	1
Two-horsed provision wagon	1
Total carriages	2

A park company would have the same strength as the above with 2 drivers and a 4-horsed wagon in addition.

The staffs of battalions are composed as follows:—

Ranks, &c.	Battalion in a regiment.	Independent Battalion.
Field Officer in command	1	1
2nd Lieutenant as Adjutant	1	1
2nd Lieutenants attached .. ..	..	2
Total officers	2	4
Medical officers	2	2
Paymasters	1	2
Armourers	1	1
Total officials	2	3
Sergeant-major artificers .. ..	..	10
Sergeant-artificers .. ..	..	15
Under-officer as clerk	1	1
Total N.-C. officers, combatants ..	1	26
Train drivers	1	1
Officers', &c., grooms	6	9
Tradesmen .. ..	..	12
Total men, non-combatants	7	22
Total N.-C. officers and men	8	48
Horses:—Officers', &c., riding	8	11
draught	2	2
Total horses	10	13
Two-horsed battalion baggage wagon ..	1	1

The staff of a regiment would comprise the following:—

Field Officer Commanding	1
1st Lieutenant as Adjutant	1
2nd Lieutenants attached	6
Total officers	8
Sergeant-major artificers	13
Sergeant-artificers	20
Under-officer as clerk	1
Bandsmen	13
Total N.C. officers and men, combatants	57
Train driver	1
Officers' grooms	10
Workmen.. ..	24
Total men, non-combatants	35
Total N.-C. officers and men	92
Horses: Officers' riding	14
Draught	2
Total horses	16
2-horsed regimental baggage wagon	1

The war strengths of the various units would be, according to the above :—

WAR STRENGTH OF BATTALIONS AND REGIMENTS OF FOOT ARTILLERY.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and men.		Horses.	Carriages.
				Comb.	N-comb.		
Battalion in a regiment ..	22	2	2	1,026	29	64	12
Independent battalion ..	24	2	3	1,051	44	67	12
Regiment of 2 battalions ..	52	4	4	2,109	93	144	25

The above figures are from "Die Streitkräfte, &c., Deutschlands," modified by recent regulations.

The transport wagons are the same as in the infantry.

C. SIEGE PARKS.

There are kept up in peace, divided among 12 of the principal fortresses :—

1st. Three siege parks, composed each of 4 sections of 60 guns, and an *Abtheilung* of 4 park ammunition columns (*Munitions-Fuhrpark-Colonne*), the material for which is kept separate in the stores of the artillery depôts. Each park can be divided into 4 units, each of a section of 60 guns and a park ammunition column.

2nd. Two reserve siege parks of the same composition as the above, but formed in part of the guns detailed as armament for the fortresses, and with no ammunition columns.

3rd. Two special siege parks, which would march with the field army to bombard barrier forts, or to be employed as batteries of position, each of 40 guns and an *Abtheilung* of 4 park ammunition columns.

4th. Three reserve sections, each of 24 guns, destined to replace losses in or to add to the strength of the other parks.

To each section of a siege park or special siege park would be attached a foot artillery regiment of two battalions, with its two park companies. A special staff is formed for each park, and it is probable that the Inspectors of Foot Artillery with their staffs would take charge of the siege parks, while the staff of the regiment attached would perform the same duties for the special and reserve parks.

The park ammunition columns would each have 1 captain, 1 2nd lieutenant, 1 sergeant-major, 2 sergeants, 7 under-officers, 8 lance-corporals, 80 train drivers, 1 farrier, 1 hospital assistant, 16 riding and 164 draught horses, and 40 4-horsed ammunition wagons.

Each section of a siege park is composed of—

- 24 heavy 12-cm. guns.
- 12 short 15-cm. guns.
- 6 belted 15-cm. guns.
- 6 21-cm. rifled mortars.
- 6 15-cm. rifled mortars.
- 6 9-cm. rifled mortars.

60 guns and mortars.

For each of these is supplied—

- 1,000 common shell } for each heavy 12-cm. or 15-cm. belted
- 200 shrapnel shell } gun.
- 1,000 common shell } for each short 15-cm. gun.
- 100 shrapnel shell }
- 1,000 double shell for each 15-cm. and 21-cm. mortar.
- 100 common shell for each 9-cm. mortar.
- 50 chilled shot for armour-piercing are also supplied for each 15-cm. belted gun.

The special parks are each composed of—

- 12 heavy 12-cm. guns.
- 20 short 15-cm. guns.
- 8 21-cm. rifled mortars.

40 guns and mortars, with a supply of ammunition of 1,000 common shell and 200 shrapnel for each gun, and 1,000 shell for each mortar.

Each reserve section comprises—

- 12 short 21-cm. bronze guns or 12 heavy 12-cm. bronze guns.
- 12 heavy 9-cm. bronze guns.

24 pieces, with—

- 1,000 heavy common shell, 1873 pattern } for 9-cm. guns.
 - 200 heavy shrapnel shell, 1873 pattern }
 - 1,000 common shell } for 12-cm. guns.
 - 200 shrapnel shell }
 - 1,000 common shell for 21-cm. guns.
-

CHAPTER X.

FIELD TROOPS: PIONEERS AND RAILWAY TROOPS.

A. PEACE FORMATION.

THE German pioneers and railway troops comprise in peace—

- 19 Battalions of pioneers of 4 companies (5 in Bavaria).
- 1 Company of telegraphists.
- 1 Railway regiment of 4 battalions.
- 1 Railway battalion of 2 companies.
- 1 Balloon detachment.

The company of telegraphists is attached to the Guard Pioneer Battalion, and the Balloon Detachment to the Railway Regiment. The names and numbers of the battalions, &c., are as follows:—

- Guard Pioneer Battalion.
- East Prussian Pioneer Battalion, No. 1.
- Pomeranian Pioneer Battalion, No. 2.
- Brandenburg Pioneer Battalion, No. 3.
- Magdeburg Pioneer Battalion, No. 4.
- Lower Silesian Pioneer Battalion, No. 5.
- Silesian Pioneer Battalion, No. 6.
- Westphalian Pioneer Battalion, No. 7.
- Rhenish Pioneer Battalion, No. 8.
- Schleswig-Holstein Pioneer Battalion, No. 9.
- Hanoverian Pioneer Battalion, No. 10.
- Hessian Pioneer Battalion, No. 11.
- Saxon Pioneer Battalion, No. 12.
- Württemberg Pioneer Battalion, No. 13.
- Baden Pioneer Battalion, No. 14.
- Pioneer Battalion, No. 15.
- Pioneer Battalion, No. 16.
- 1st Bavarian Pioneer Battalion.
- 2nd Bavarian Pioneer Battalion.
- The Railway Regiment.
- The Bavarian Railway Battalion.

Each battalion belongs to the Army Corps whose name and number it bears. The 16th Battalion is attached to the 15th Army Corps, the Railway Regiment to the Guard Corps, and the Bavarian Railway Battalion to the 1st Bavarian Army Corps. Each pioneer battalion is recruited in the Army Corps District to which it belongs, the Railway Regiment being recruited all over the kingdom of Prussia for 14 of its companies, while the 15th Company is supplied by Saxony, and the 16th by Württemberg, and the Bavarian Railway Battalion receives its recruits from all Bavaria.

The pioneers are trained in sapping and mining, the construction of field and siege works, the repair and construction

of roads, &c., and in bridging, and have besides to go through a complete course of infantry drill, though the parade formations in three ranks are never practised. Each of the Guard and 1st to 15th Battalions has 4 companies, of which the first 3 are trained as field engineers, the fourth as siege or fortress engineers. The Bavarian Battalions have five companies, the 1st to 3rd being field and the 4th and 5th fortress companies. The 16th battalion has only 4 fortress companies.

The company of telegraphists is quite a new departure in Germany, as, up to the 1st April, 1887, the telegraph sections were mobilised from men furnished by all the pioneer battalions, and only six sergeants, in the Guard, 4th, 7th, and 11th Battalions, were maintained supernumerary to the establishment of these battalions to take care of the stores for those sections. The company is stationed at Berlin and attached to the Guard Pioneer Battalion, of which it forms the 5th Company.

The peace establishments of the companies of pioneers are as follows:—

PEACE STRENGTH OF PIONEER COMPANIES.

Ranks.	Pioneer Companies.			Telegraph Company.
	Prussia and Saxony.	Württemberg.	Bavaria.	
Captain	1	1	1	1
1st Lieutenant	1	1	1	1
2nd Lieutenant	2	2	2	2
Total officers	4	4	4	4
Sergeant-major	1	1	1	1
Vice-sergeant-major	1	1	1	1
Ensigns	1	1	1	1
Sergeants	4	4	4	4
Under-officers	9	8	9	9
Lance-corporals	9	9	9	12
Buglers	3	3	3	3
Privates	93	87	89	102
Aspirant paymaster .. .. .	..	..	..	1
Total N.-C. officers and men, combatants	121	114	117	134
Hospital assistant	1	1	1	1
Tradesmen	3	3	3	3
Total men, non-combatants	4	4	4	4
Total N.-C. Officers and men	125	118	121	139
Officers' horses	1	1	1	1

The battalion staff comprises a field officer in command with
(965)

a 2nd lieutenant as adjutant, and, in Prussia and Saxony only, a supernumerary captain, 2 medical officers, a paymaster, an armourer, and 4 non-commissioned officers (5 in Prussia and Saxony), and 2 lance-corporals or pioneers employed as clerks or store-keepers, with 3 officers' horses, so that the total strength of a battalion is—

PEACE STRENGTH OF PIONEER BATTALIONS.

	Officers.	Medical Officers.	Officials.	N.-O. Officers and Men.		Officers' Horses.
				Com-batants.	Non-Com-batants.	
Prussian and Saxon (ex. Guard Battalion) ..	19	2	2	491	16	7
Guard Battalion ..	23	2	2	625	20	8
13th (Württemberg) Battalion ..	18	2	2	461	16	7
Bavarian Battalion ..	22	2	2	592	20	8

Each battalion has also a varying number of 2nd lieutenants who have not yet passed their examinations at the Artillery and Engineer School, and who are therefore supernumerary.

The Railway Regiment is composed of four battalions, each of four companies, numbered from 1 to 16, the 1st to 14th being Prussian, the 15th Saxon, and the 16th supplied by Württemberg. The Bavarian Battalion is composed of a staff and two companies. The railway troops are trained not only in the construction, destruction, and repair of railway lines, but in the management and working of the traffic on them, and for the latter purpose the Railway Regiment has a railway of its own at its disposal. (See Chapter X, Part II.)

The strength of a railway company is as follows:—

PEACE STRENGTH OF RAILWAY COMPANIES.

	Prussia.	Bavaria.
Captain	1	1
1st Lieutenants	1	2
2nd Lieutenants	3	5
Total officers.. .. .	5	8
Sergeant-major	1	1
Vice-sergeant-major	1	1
Sergeants	4	6
Under-officers	12	17
Lance-corporals	12	20
Privates	88	103
Total N.-C. officers and men, combatants .	116	148
Hospital assistant	1	1
Tradesmen	3	4
Total men, non-combatants.. .. .	4	5
Total N.-C. officers and men	122	153
Officer's horse	1	1

The staff of a battalion consists of a field officer in command and a 2nd lieutenant as adjutant, 1 clerk (2 in Bavaria) (non-commissioned officer or lance-corporal), 2 medical officers (1 in Bavaria), a paymaster, and an armourer, with 3 officers' horses. The regimental staff of the Railway Regiment consists of 2 field officers (1 in command, 1 for staff duties), 2 captains (1 supernumerary, 1 in charge of the depôt of stores) 2 1st lieutenants (one as regimental adjutant), a paymaster, and 8 non-commissioned officers and 10 lance-corporals and privates as aspirant paymasters, buglers, clerks, store-keepers, &c., with 4 officers' horses. Thus the total strength of units is as follows :—

PEACE STRENGTH OF RAILWAY REGIMENT AND BATTALIONS.

	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Officers' Horses.
				Com-batant.	Non-Com-batant.	
Railway Regiment..	94	8	9	1,910	64	32
Prussian Battalion..	22	2	2	473	16	7
Bavarian Battalion .	18	1	2	298	10	5

In each company two men are trained as buglers. Of the 100 lance-corporals and privates of each company, 36 should be railway workmen or employes, 10 locksmiths, 4 smiths, 20 carpenters, 8 masons, 8 miners, 2 stone-cutters, 2 cistern-makers, 6 tinsmiths, and 4 wheelwrights.

The Balloon Detachment is attached to the Railway Regiment, its officers being on the same list for promotion as those of the latter, and consists of a major, 2 1st lieutenants, 2 2nd lieutenants, and 50 non-commissioned officers and men. Its practice-ground is at the west end of the Tempelhof drill-ground at Berlin, where it possesses all the establishments required for making and filling balloons, and during the period of practice of the Guard Artillery it goes to the Tegel range to practise observations. A carrier pigeon establishment with 50 birds is attached to the detachment.

The total strength of the German pioneers and railway troops in peace will be found in Appendix III.

The outpost telegraph, electric light, and carrier pigeon services, being in charge of the engineers in Germany, may here find a place.

The outpost telegraph apparatus consists of two Morse instruments, a battery of 10 Daniell's elements, and 2 drums, each with 550 yards of cable. The diameter of the cable is .117 inch, and it weighs 12.64 lbs. for the length of 550 yards. The battery is so constructed as not to be damaged by transport, and weighs, with its box complete, 24.2 lbs. The Morse instruments each weigh 10.45 lbs., and are automatic and adapted for continuous currents. To work the outpost telegraph, a non-commissioned officer and two men are sufficient. One man remains at the initial station with the battery and one of the instruments, while the other man moves forward, paying out one cable from a drum carried in his hands, with the other drum on a special knapsack. The non-commissioned officer accompanies the latter man and carries the second instrument. The two cables can be paid out and both stations connected up in 10 minutes. Fifteen to 20 minutes are required to roll up again. In 1879, the German Army possessed 60 sets of outpost telegraph apparatus.

Besides the fixed electric light apparatus in use in fortresses and coast batteries, the Germans have also moveable electric lighting apparatus, composed of a Dolgoruki engine, a Hefner-Alteneck dynamo-electric machine, and a Siemens reflector, for use in siege or field warfare.

Carrier pigeon stations have been established for military purposes at Berlin, Cologne, Posen, Thorn, Würzburg, Mainz, Wilhelmshaven, Kiel, Danzig, and Tönning for 200 pigeons each, the latter four being under the Admiralty, and at Strassburg and Metz for 600 each.

B. WAR FORMATION.

(a.) *Pioneers.*

On mobilisation, each pioneer battalion forms—

(a.) A battalion staff, which would join the staff of the General Commanding the Army Corps.

(b.) Three field companies, one being permanently attached to each division, and the third kept at the disposal of the Army Corps Commander.

(c.) Two divisional bridge trains, one attached to each divisional pioneer company.

(d.) One corps bridge train with a special detachment of pioneers.

(e.) Two siege companies.

(f.) One reserve field company (two in the Guard). (See Chapter XII.) *

The 16th Battalion on mobilisation would form six siege companies. The 12th Battalion would have to form a fourth field company and a third divisional bridge train for the third division of its Army Corps, and the 15th Battalion would have to provide a fourth field company, a third divisional bridge train, and a corps bridge train for the 16th Army Corps, which would probably be composed of the 25th and 33rd Divisions. The Guard Battalion would form two reserve field companies.

The normal battalion mobilises its first three companies as they stand with the aid of reserve men. The 4th (Miner) Company is broken up to form the siege or reserve companies, except in the Bavarian Battalions, in which the two siege companies already exist in time of peace. The bridge trains are mobilised along with the companies to which they are attached. The following table shows the war strength of each of the above units:—

* Extra companies would have to be formed as required for the Landwehr Divisions, if the latter were mobilised.

WAR STRENGTH OF UNITS OF PIONEER BATTALION.

Ranks.				Battalion Staff.	Field Pioneer Company.	Divisional Bridge Train.	Train Detachment of Corps Bridge Train.	Pioneer Detachment of Corps Bridge Train.	Siege Pioneer Company.
Field Officer Commanding	..	..	..	1	..	..	..	..	..
Lieutenant as Adjutant	..	..	..	1	..	..	..	..	..
Captain	..	..	..	..	1	..	1	..	1
1st Lieutenant	..	..	..	..	1	1	..	1	1
2nd Lieutenants	..	..	..	..	3	1	2	1	2
Total officers	..	..	..	2	5	2	3	2	4
Medical officers	..	..	..	..	1	..	1	..	1
Paymaster	..	..	..	..	..	..	1	..	..
Veterinary Surgeon	..	..	..	..	..	..	1	..	..
Total officials	..	..	..	..	..	..	2	..	..
Sergeant-major	..	..	..	..	1	..	..	..	1
Vice-sergeant-major	..	..	..	..	1	..	..	..	1
Sergeants	..	..	..	..	4	..	..	..	4
Under-officers	..	..	..	1	14	7	14	7	14
Buglers or trumpeters	..	..	..	..	8	2	2	1	3
Lance-corporals	..	..	..	..	22	..	..	} 53 {	} 22 {
Pioneers	..	..	..	..	155	..	..
Total N.-O. officers and men, combatants	..	..	..	} 1	200	9	16	61	200
Train drivers	..	..	..	1	6	41	106	..	5
Officers' grooms	..	..	..	3	6	2	5	2	5
Hospital assistant	..	..	..	..	1	..	..	..	1
Farrier	..	..	..	..	..	..	1	..	..
Total men, non-combatants	..	..	..	4	13	43	111	2	11
Total N.-C. officers and men	..	..	..	5	213	52	127	63	211
Officers', &c., horses	..	..	..	7	7	3	8	2	6
Riding horses	..	..	..	..	..	9	17	..	..
Draught horses	..	..	..	2	12	72	190	..	12
Spare horses	..	..	..	..	..	4	8	..	..
Total horses	..	..	..	9	19	88	223	2	18
Carriages: 2-horse	..	..	..	1	2	1	1	..	2
4-horse	..	..	..	..	2	4	2	..	2
6-horse	..	..	..	..	..	9	30	..	..
Total	..	..	..	1	4	14	33	..	4

Omitting the siege and reserve companies, the total field units to be mobilised by a pioneer battalion for an army corps of two divisions amount to—

WAR STRENGTH OF PIONEER BATTALION for an Army Corps of 2 Divisions (omitting Siege and Reserve Companies).

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.		Horses.	Carriages.
				Com- batants.	Non-Com- batants.		
1 Battalion Staff	2	..	..	1	4	9	1
3 Field Companies	15	3	..	600	39	57	12
2 Divisional Bridge Trains ..	4	..	..	18	86	176	28
1 Pioneer Detachment	2	..	..	61	2	2	..
1 Corps Bridge Train	3	1	2	16	111	223	33
Total	26	4	2	296	242	467	74
(Of which of the train) ..	(7)	..	..	(25)	(238)	..	..
And for an army corps of 3 divisions, in addition :—							
1 Field Company	5	1	200	200	13	19	4
1 Divisional Bridge Train ..	2	..	..	9	43	88	14
Total	33	5	202	905	298	574	92

The Commander of the Pioneer Battalion is the Commanding Engineer of the Army Corps, and his duties consist in the general superintendence of all technical matters connected with the pioneer duties in the corps. He would personally direct all works performed by more than one field pioneer company. He has nothing, however, to do with the discipline of those companies, as they are directly under the orders of the general commanding the division to which they are attached. The carriage belonging to the battalion staff is a two-horsed baggage wagon.

A field pioneer company has, as above stated, 4 wagons, namely, a two-horsed baggage wagon, a four-horsed tool wagon,* a four-horsed powder wagon,* and a two-horsed provision wagon. The baggage wagon is the same as the infantry company baggage wagon, and carries the officers' and sergeant-major's baggage and the following reserve clothing, &c.:— 3 bugles, 20 cholera-belts, 20 pairs of boots, 10 pairs of shoes or canvas boots, 10 forage caps, 10 tunics, 10 stocks, 10 pairs trousers, 10 pairs canvas trousers, 20 pairs of drawers, 10 great coats, 10 shirts, and 20 canvas jackets. In it are also packed forage for the officers' and draught horses and the company books, &c. The tool wagon is similar to the old pattern battalion baggage wagon described for infantry, but is differently arranged inside and has a rail round the top. In it are carried 60 large shovels, 20 pickaxes, 20 axes, 12 saws, 6 miner's picks, &c. As stated in Chapter XVI, the men of a field pioneer company carry 88 large shovels, 44 pickaxes, 45 axes, and 17 hatchets, so that

* Light baggage.

the total number of tools carried by a company is 148 large shovels, 74 pickaxes, 65 axes, 17 hatchets, and 12 saws, besides smaller tools. The Bavarian tool wagon is of a special pattern. The powder wagon is similar to the old pattern artillery ammunition wagon, but has no fittings for carrying men, such as hand-rails, back-rests, &c. In it are carried 616 lbs. of gun-cotton which can be replenished from the field ammunition park, in each column of which 3,286·8 lbs. of ordinary powder, or an equivalent quantity of gun-cotton is carried. A similar supply of explosives is kept in each main ammunition dépôt. The provision wagon is the same as in the infantry. The tool and powder wagons are never separated from the company and follow it into action.

The Commander of a Divisional Bridge Train is the captain of the company to which it is attached, and that company furnishes a detachment of 1 under-officer, 1 lance-corporal, and 16 pioneers, who always accompany the bridge train. The Corps Bridge Train is under the command of the captain of the train detachment, but if a bridge has to be thrown the captain of the pioneer company detailed for the purpose takes charge of the operation. If all three bridge trains of a corps are used together, the Commanding Engineer of the Corps takes charge. The *personnel* of the bridge trains is taken from the reserve of the train.

The wheeled transport of bridge trains is as follows:—

	Divisional Train.	Corps Train.
2-horsed baggage wagons	1	1
4-horsed wagons with ladder sides (<i>Leiter- Wagen</i>)	1	2
4-horsed pioneers' tool wagon	3	..
6-horsed trestle wagons	2	2
6-horsed pontoon wagons with cleated baulks ..	2	2
6-horsed pontoon wagons with ordinary baulks ..	4	24
6-horsed wagons for bridging gear, stores, &c. ..	1	2
Total	14	33

This enables the following bridging equipment to be carried:—

By a Divisional Bridge Train: 6 pontoons and 4 trestles, enabling 4 bays of bridge with cleated baulks (or trestle bays) and 4 bays with ordinary baulks (or pontoon bays) to be thrown.

By an Army Corps Bridge Train: 26 pontoons and 4 trestles, enabling 4 bays with cleated baulks (or trestle bays) and 24 bays with ordinary baulks (or pontoon bays) to be thrown.

The bays with cleated baulks (or trestle bays) are 16 feet 3 inches, and the bays with ordinary baulks (or pontoon bays) 14 feet 7 inches from centre to centre.

With a Divisional Bridge Train, a bridge of 120 feet may be thrown, using 5 pontoons and 2 trestles, forming 2 end bays (16 feet 3 inches each), 2 pontoon and trestle bays (of 14 feet 7 inches each), and 4 pontoon bays (of 14 feet 7 inches each). Using the long bay, the bridge might be made longer, but with the 150 chesses carried only 126 feet 3 inches of bridge could be planked.

With an Army Corps Bridge Train a bridge of 396 feet could be thrown, using 24 pontoons and 2 trestles. With the 510 chesses carried the longest bridge that could be planked would be 431 feet.

An army corps has thus in its divisional and corps bridge trains enough bridging equipment for throwing a bridge of from 636 feet to 671 feet.

The usual bay employed in the German pontoon bridge is the *short* bay, that is to say, when the baulks rest on all four gunwales. In the *long* bay the baulks rest on both gunwales of one pontoon and on one gunwale only of the other.

Bridges thrown with the usual bay of 14 feet 7 inches, and with a roadway of 10 feet in the clear between the ribands, can take troops with field artillery and trains. Infantry pass in file (3 deep) or sections of four files, breaking step; cavalry in twos, the men leading their horses; artillery and trains by single carriages, the drivers (from the saddle) dismounted. If there is a prospect of a crush, or heavy artillery is to cross, the length of the bays is diminished by inserting an additional pontoon in every bay.

It takes about 40 minutes for a divisional train, and 140 minutes for an army corps train, to discharge wagons and stores on the bank, ready to form bridge (5 minutes per wagon), and it takes 40 and 116 minutes to form bridge in the two cases under ordinary conditions (3 minutes per pontoon bay and 6 minutes per trestle bay).

If the wagons are not simultaneously unloaded on the bank, but one by one as the bridging progresses, it takes 50 minutes in the case of the divisional train and 145 minutes in the case of the army corps train, to form bridge (5 minutes per pontoon bay and 10 minutes per trestle bay), but in this case the working party must be a very strong one.

These *data* only hold good if no ramps have to be cut, if the bottom is good holding ground, and if the current is moderate. As a general rule, half a day should be reckoned on as the time required to throw a bridge with the bridge trains of an army corps.

The baggage wagon is the same as that for a pioneer company, and carries the officers' and sergeant-major's baggage, a reserve of clothing consisting of 4 or 5 per cent. of the articles likely to wear out first, and 2 trumpets, 10 cholera-belts, 6 pairs of boots, and 4 pairs of shoes or canvas boots for a divisional train, or 2 trumpets, 20 cholera-belts, 12 pairs of boots, and 8 pairs of shoes or canvas boots for a corps train, the coffee mills,

a veterinary store chest, 2 corn-sacks, 2 pairs of horse-shoes, with 32 nails, tailor's and shoemaker's tools, other tools, 2 or 5 blankets (in divisional or corps train respectively), and, in the corps train only, a box of number stamps, a box of branding irons, and a medical store chest.

The ladder-sided wagons carry, in the divisional bridge train, 1 heavy anchor, 1 cable, 2 trestle shoes, 2 suspension chains, 1 warp, spare stores for the wagons, 8 corn-sacks, 2 sickles, the wallets and mess tins of the dismounted (reserve) drivers, &c., and, in the corps train, 2 heavy anchors, 1 grapnel, 1 cable, 2 standards for hand-rail, 3 warps, 2 capstans, spare stores for the wagons, 8 corn-sacks, 1 scythe, 2 sickles, the wallets and mess tins of the dismounted (reserve) drivers, &c.

The tool wagons are the same as in the pioneer companies and carry the following tools, besides 4 corn-sacks, line-gear, &c.:—600 large shovels, 150 pickaxes, 90 axes, 30 saws, 24 hammers, 12 sledge-hammers, 12 pile-drivers, &c.

The pontoon wagon is close-locking, and carries a pontoon, 7 baulks, 18 chesses, 1 light anchor, 1 or 2 cables, 3 oars, 6 corn-sacks, and various small stores. The pontoon is of galvanized sheet-iron, and is 24 feet 10 inches long, 4 feet 10½ inches broad, and 2 feet 7½ inches deep inside. It weighs 990 lbs., and cannot be used in less than 1 foot 11½ inches of water. The cleated baulks are 17 feet 10½ inches long, 5·85 inches deep, and 3·9 inches broad, with oak cleats fixed by an iron bolt and two iron straps. The ordinary baulks are 21 feet 5½ inches long, 5·07 inches deep, and 4·09 inches broad, are made of pine or deal, and weigh 99 lbs. each. They have holes at each end to take the iron pins of the wagons on which they are carried.

The trestle wagons are similar to the pontoon wagons and can be used as such. Each carries 7 cleated baulks, 21 chesses, 4 trestle transoms, 6 trestle legs (4 long and 2 short), and various small stores, stable utensils, &c. The trestle can be used in water as deep as 8 feet 1½ inches.

The bridging store and equipment wagon of the 1858 and 1859 pattern is a single large van with curved top and a box in front and rear. It carries bridging gear, carpenter's, smith's, and saddler's tools, harness and saddlery, veterinary stores, 6 corn-sacks, 25 pairs of horse shoes, 500 shoe-nails, and the following pioneer tools:—in a divisional train, 3 axes, 1 hatchet, 3 saws, &c.; in a corps bridge train—on the two wagons—6 axes, 2 hatchets, 9 saws, 8 hammers, 4 sledge-hammers, 2 pile-drivers, &c. The Bavarian wagon is only slightly different from the Bavarian company tool wagons.

Every wagon of a bridge train has as camp equipage: 1 shovel (spade in the corps trains), 1 pickaxe, and 1 hatchet, so that the total number of tools carried with a divisional bridge train is 614 large shovels, 164 pickaxes, 93 axes, 15 hatchets, 33 saws, 24 hammers, 12 sledge-hammers, 12 pile-drivers, &c., and with a corps bridge train, 33 spades, 33 pickaxes, 35 hatchets, 9 saws, 8 hammers, 4 sledge-hammers, 2 pile-drivers, &c.

The strength given above for a siege pioneer company is that when it is mobilised and sent with the siege park. In this case the companies would be grouped by four into battalions, which would have a staff of the same composition as that given for an infantry battalion. If employed in the defence of a fortress only, a company would have no train drivers, and only one officer's horse (for the Captain).

(b.) Telegraph Sections.

On mobilisation, the telegraph company is expanded by calling in reserve men who have been trained in telegraphy and those who are employed in the State Telegraph Department into 16* corps telegraph sections and 5 army telegraph sections. The Bavarian pioneer battalions also mobilise 2 corps and 1 army sections.† The corps telegraph sections are for work at the front, one being attached to each Army Corps. The army telegraph sections work in second line, communicate with the lines of communication, telegraph directions in rear, repair damaged lines, complete those erected by the corps sections, and supply material to replace that expended by the latter. One section is always retained with Army Headquarters, and the others are distributed among the armies.

Each section is composed of a telegraphic detachment and a train column, the former furnished by the telegraph company and its reserve, the latter by the reserve of the train. The following table gives the strength of each :—

* 17 if a 16th Corps be formed.

† Formerly these were called "field" and "reserve" sections, eight of the former and six of the latter being mobilised. In the orders for the training of the reserve, &c., for 1899, however, in para. 33, Corps and Army Telegraph sections are mentioned, and it is presumed that the reorganisation, which was known to be pending, has been carried out.

WAR STRENGTH OF TELEGRAPH SECTIONS.

Ranks, &c.	Corps Section.		Army Section.	
	Pioneer Detach-ment.	Train Column.	Pioneer Detach-ment.	Train Column.
Officers	3	1	3	1
Medical officers	1	..	1	..
Telegraph employés	7 to 11	..	20	..
Under-officers.. .. .	8	4	8	6
Buglers	1	..	1	..
Lance-corporals and pioneers	81	..	81	..
Drivers of the train (including officers' servants	11	32	13	39
Total N.-C. officers and men ..	101	36	103	45
Riding horses.. .. .	8	} 66	8	} 81
Draught horses	2		2	
Total horses	10	66	10	81
6-horse wire wagons .. .. .	..	6	..	} 16
2-horse station wagons .. .. .	..	3	..	
4-horse material wagons .. .. .	..	1	..	
2-horse carriages for the employés .. .. .	..	3	..	
2-horse baggage wagons	1	..	1	} 16
Total carriages	1	13	1	

Each corps section can be divided into three units, each with a station wagon, two wire wagons, and one carriage for employés, so that three lines can be begun simultaneously. The material at the disposal of each section permits of its erecting about $23\frac{1}{2}$ miles of line, of which $15\frac{1}{2}$ of air line and 8 of insulated cable, besides which 330 yards of special cable are carried.

The ordinary wire is of copper, .08 inch in diameter, and weighs $42\frac{1}{2}$ lbs. per mile; for the lines of communication telegraphs part of the material consists of wire .084 inch in diameter, and weighing 44 to 48.4 lbs. per mile. The insulated cable is composed of three strands of copper wire covered with three layers of insulating material like gutta-percha, and with an exterior covering of coarse felt. The special cable is used when the ordinary cable gives an insufficient resistance, as in mountainous or wooded regions, or across swampy ground. It is .24 inch in diameter, weighs 66 lbs. per mile, and is made up of a steel wire surrounded by insulating material, and protected by six copper wires rolled in a spiral, the whole being surrounded by a coating of hemp impregnated with insulating composition.

Lastly, for the passage of rivers, a cable is used composed of seven strands of copper wire with a coating of insulating material covered with tarred hemp, and with an exterior protection of 16 iron wires rolled in a spiral.

The posts used are of pine, 1.56 inches in diameter, 12 feet 3 inches long, and weighing 2.2 lbs. without the iron holders for insulators and the iron shoes at their lower extremities. For road crossings, &c., jointed poles of pine, whose lower parts are 2½ inches in diameter, and united to the upper parts, which are 1.56 inches in diameter, by two metal collars, are used. With these the wire can cross a span of 44 yards at a height of 16 feet 3 inches. The poles are usually placed 44 yards apart, and the wire is 8 feet 1½ inches above the ground. This height is insufficient, and it is proposed to replace the pine poles by others of bamboo, which will be much lighter and will give 16 feet 3 inches of headway. The insulators are of ebonite, are 3.3 inches high and 1.1 inches in diameter, and are fixed on the top of the pole by a metal spike with a screw end. The wire fits into a T-shaped slot on the top of the insulator. Rings and spikes are also used to fix the insulators to branches of trees, the wire being in this case suspended to an S-shaped hook fixed to the lower extremity of the insulator.

The batteries used are of the Marié-Davy system, and are composed of 10 elements. Each section has 10 such batteries. The instruments are on the Morse system.

The station wagons are covered carriages with two windows in front and two on the near side, the door, which has also a window, being in rear. The table with the instruments is on the near side of the carriage, and the inside is so fitted that two clerks can either work or lie down.

The wire wagons are covered and are close-locking. Each carries 200 poles in three longitudinal compartments, and above these are wooden drums separated from one another by sheet-iron discs, and carrying the wires or cables. In rear of the carriage are seats for two men, and on the off side is carried a double ladder for mounting poles.

The material wagons have rack (ladder) sides, and are used for carrying spare stores, forage, &c. They are covered with tarpaulins. The carriages for employes are britzkas, with a box under the seat and another in rear for baggage.

(c.) *Railway Troops.*

On mobilisation the railway battalions are broken up, and the companies are reformed into—

- (a.) Railway construction companies (*Eisenbahnbau-Compagnieen*).
- (b.) Railway traffic companies (*Eisenbahnbetriebs-Compagnieen*).

(c.) Railway workmen companies (*Eisenbahn-Arbeits-Compagnieen*).

According to Helldorff (1879 edition) the Prussian Railway Regiment, then only two battalions strong, mobilised 4 construction, 8 traffic, and 2 workmen companies, and the then existing Bavarian Company, 1 traffic and 1 workmen companies. As, however, the Railway Regiment and Bavarian Company have since then been doubled in strength, and the reserve and Landwehr of both are very large, comprising, besides the men who have actually passed through the ranks, all railway servants and employes in the reserve or Landwehr, whatever branch of the service they may have belonged to previously, it may be permitted to conclude that the number of war formations will also now be doubled, and that the Railway Regiment will mobilise 8 construction, 16 traffic, and 4 workmen companies, and the Bavarian Battalion 1 construction, 2 traffic, and 1 workmen companies. These would be the first formations on mobilisation and others would follow as required. The strength of each of these companies would be as follows:—

WAR STRENGTH OF RAILWAY COMPANIES.

Rank, &c.	Construction Company.	Traffic Company.	Workmen Company.
Captain	1	1	} 2
1st Lieutenant	2	1	
2nd Lieutenant	6	4	
Total officers	9	6	2
Medical officer	1	..	..
Paymaster.. .. .	1	..	..
Sergeant-major	1	1	} 202
Under-officers	24	40	
Buglers	3	..	
Lance-corporals	} 172	20	
Privates		139	
Of the { Under-officers	1	..	
Train { Lance-corporals	1	..	
{ Privates.. .. .	8	..	
{ Officers' servants	11	6	
Hospital assistants	1	..	
Total N.-C. officers and men ..	222	206	202
Riding horses	13	2	..
Draught horses.	16	..	..
Total horses	29	2	..
4-horsed carriages	3	..	..
2-horsed carriages	2	..	..
Total carriages	5	..	..

The duty of the construction companies is to repair as quickly as possible lines destroyed by the enemy, or to destroy lines which must be abandoned to him, and they would therefore take the field with the troops in first line. These companies absorb the greater part of the men of the peace establishment of the railway troops. The transport of a company consists of two 4-horsed wagons for tools and appliances, a 4-horsed wagon with ladder sides for stores, a 2-horsed baggage wagon, and a 2-horsed carriage for telegraph purposes. These five carriages cannot transport all the stores of the company, but as, when lines are being repaired, work is invariably begun from both ends, they will probably be sufficient to carry the stores required to the far end, while the special railway train attached to the company brings the rest up to the near end. On mobilisation the railway companies are bound to place at the disposal of each construction company a special train of a locomotive and 20 carriages of all sorts, which it retains during the whole of the war, and which transports its *personnel* and material complete.

The traffic companies are substituted for the civil *personnel*, whether these have remained at their duty or not, on all lines of rail in the neighbourhood of or on the lines of communication of the field army. Each can work 30 to 40 miles of line, and 2 to 4 companies are placed at the disposal of each line of communication railway direction (see Chapter XXII). They are formed of reserve officers and men mostly, with a few officers, non-commissioned officers, and men of the peace establishment. The lieutenants perform the duties of station-masters, and of the 40 under-officers, 4 are assistant station-masters, 1 baggage clerk, 12 engine-drivers, 7 guards (*Zugführer*), 7 baggage guards (*Packmeister*), 3 line inspectors (*Bahnmeister*), and 6 telegraph clerks. Of the 20 lance-corporals, 3 would be employed as guards, 1 as foreman of telegraphs, 2 as foremen of plate-layers, 12 as stokers, and 2 in charge of stationary engines. Of the 139 privates, 4 would be shunters, 18 point-men, 14 plate-layers, 7 engine-fitters, 4 greasers, 2 engine-cleaners, 55 porters, and 35 brakemen.

The workmen companies are also formed principally of reserve men, and furnish the necessary *personnel* for loading and unloading trains and packing stores in the magazines.

The total strength of the companies to be mobilised by the railway troops would be as follows, excluding the *personnel* for the railway administrations, and any subsequent formations which might be required :—

WAR STRENGTH OF RAILWAY TROOPS.

	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.	Horses.	Car- riages.
Railway Regiment—						
8 Construction companies	72	8	8	1,998	261	45
16 Traffic companies ..	96	..	..	3,296	82	..
4 Workmen companies ..	8	..	..	808	..	..
Total	176	8	8	6,102	293	45
Bavarian Battalion—						
1 Construction company.	9	1	1	222	29	5
2 Traffic companies ..	12	..	..	412	4	..
1 Workmen company ..	2	..	..	202	..	..
Total	23	1	1	836	33	5

Nothing is known as to the war formation or mobilisation of the balloon detachment.

CHAPTER XI.

FIELD TROOPS: TRAIN.

A. PEACE FORMATION.

THE train troops consist in peace of 18 battalions and 1 independent company, with names and numbers as follows:—

Guard Train Battalion.
 East Prussian Train Battalion, No. 1.
 Pomeranian " " No. 2.
 Brandenburg " " No. 3.
 Magdeburg " " No. 4.
 Lower Silesian " " No. 5.
 Silesian " " No. 6.
 Westphalian " " No. 7.
 Rhenish " " No. 8.
 Schleswig-Holstein " " No. 9.
 Hanoverian " " No. 10.
 Hessian " " No. 11.
 Saxon " " No. 12.
 Württemberg " " No. 13.
 Baden " " No. 14.
 Train Battalion, No. 15.
 1st Bavarian Train Battalion.
 2nd " " "
 Grand Ducal Hessian Train Company.

The train battalions in peace are mere cadres, from which all the transport columns of the army are formed in war, and

from which in war mounted officers are supplied with *bâten*. Each battalion bears the number of the Army Corps to which it is attached. For administrative and inspectional purposes, the train battalions are in Prussia under the Inspector of Train, in Bavaria under the Inspector of Artillery and Train, and in Saxony and Württemberg under the Officer Commanding the Artillery Brigade.

Each battalion comprises a Staff, three companies, a bakery section, and a *depôt* of train material, the 15th and 1st Bavarian Battalions, stationed at Strassburg and Munich, having also branch *depôts* at Metz and Ingolstadt. In the Bavarian Battalions one of the companies is a "Sanitary Company," but in the others all companies are on the same footing. The Hessian Company has its own special *depôt*, and the Saxon (12th) Battalion has no *depôt*, its material being kept in the Artillery *Depôt*.

The Staff of a battalion numbers—

	Prussia, Saxony, and Württemberg.	Bavaria.
Field officer in command	1	1
1st or 2nd Lieutenant, Adjutant	1	1
Total officers	2	2
Medical officer	1*	3
Paymaster	1	1
Veterinary Surgeon	1	1
Total officials	2	2
Aspirant Paymaster	1†	1
Officers' chargers	2	3

* Some battalions have no medical officer. Most of the medical officers are Assistant-Surgeons.

† The 12th Battalion has 2 Aspirant Paymasters. The Guard Battalion has 2 under-officers employed as clerks to the Inspector of Train.

The strength of companies is as follows:—

PEACE STRENGTH OF TRAIN COMPANIES.

	Prussian, Saxon, or Württemberg Train Company.	Hessian Train Company.*	Bavarian Train Company.	Bavarian Sanitary Company.
Captain (<i>Rittmeister</i>)	1	1	1	1
1st Lieutenant	1	1	1	1
2nd Lieutenant	2	2	2	2
Total officers	4	4	4	4
Sergeant-Major	1	1	1	1
Ensign	1	1	1	1
Vice-sergeant-major	1	1	1	1
Sergeants	8	8	8	8
Under-officers	13	14	13	13
Trumpeter	1	1	1	1
Lance-corporals	13	13	13	12
Privates (<i>Gemeine</i>)	23†	23	23	22
" (<i>Train-Soldaten</i>)	38	38	38	..
Total N.-C. officers and men, combatants .. }	99	100	99	59
Hospital assistants	1	1	1	215
Tradesmen	5	5	6	6
Total N.-C. officers and men, non-combatants .. }	6	6	7	21
Total N.-C. officers and men..	105	106	106	280
Officers' horses .. ..	..	..	4	4
Riding horses	15‡	15	11	..
Draught horses	48	48	48	10
Total horses	63	63	63	14
" <i>Krümpers</i> " horses	3	3	3	3

* The Hessian Company has also 1 Medical Officer, 1 Paymaster, 1 Veterinary Surgeon, and 1 Aspirant Paymaster.

† The 18th Battalion has only 18 privates per company of this class.

‡ 16 in one company per battalion.

The privates termed "*Gemeine*" in the above table are those who serve for three years; those termed "*Train-Soldaten*" are the men who only serve for six months in two series in each year, and who only receive the rudiments of military training, sufficient to qualify them for the duties of transport drivers in war.

From the above tables it appears that the effectives in peace of the train battalions are as follows:—

	Officers.	N.-C. Officers and Men.	Medical Officers.	Military Officials.	Horses (excl. "Krümper.")
Prussian Battalion ..	14	315	1	2	192
Saxon ..	14	316	1	2	192
Württemberg ..	14	300	1	2	192
Bavarian ..	14	492	3	2	143
Hessian Company ..	4	107	1	2	66

For purposes of drill, each company has 13 wagons of old pattern. These wagons are not included in the war equipment of the battalion.

The bakery sections vary in strength for each Army Corps, and number as a rule nine men. They serve as nuclei for the bakery sections to be formed in war, and in peace their men are employed in the garrison bakeries.

The dépôts of train material contain all the wagons, harness, and other stores required by the battalion for all the columns, &c., formed by it on mobilisation. Each battalion has two officers, called 1st and 2nd Dépôt Officers (one only for the Hessian Company and 13th Battalion), one generally of the rank of captain and one of 1st lieutenant (see Chapter I, Part II) in charge of its dépôt, with three non-commissioned officers or more as conductors and clerks. Fatigues in the train dépôts are performed by special parties detailed from the troops of the garrison. The conductors and clerks are not included in the establishment of the train battalions, and the dépôt officers have the disciplinary powers of a company commander over them, the battalion commanders exercising those of regimental commanders. The dépôts are invariably in the same garrison as their battalion. Each dépôt has a treasure chest of its own, and is administered quite independently of the battalion.

The total strength of the train in peace, as shown in Appendix III, includes neither the dépôt *personnel* nor the bakery sections, which are counted as on the unattached list.

B. WAR FORMATION.

On mobilisation, each train battalion mobilises for the Army Corps to which it belongs, supposing the corps to have two divisions only:—

- 1 Battalion staff.
- 5 Provision columns (*Proviant-Kolonnen*).
- 5 Wagon park columns (*Fuhrpark-Kolonnen*).
- 1 Field bakery column (*Feld-Bäckerei-Kolonne*).
- 3 Bearer companies (*Sanitäts-Detachement*).
- 1 Horse-dépôt (*Pferde-Depôt*).
- 1 Wagon park column for line of communications work.
- 1 Reserve bakery detachment for line of communications work, except in the Guard Corps.

The Hessian Company mobilises for the 25th Division :—

- 3 Provision columns.
- 2 Wagon park columns.
- 1 Field bakery column on a reduced establishment.
- 1 Bearer company.
- 1 Horse-depôt on a reduced establishment.

The above are the only formations for field troops laid down in regulations; but if the 12th Corps takes the field with its three divisions, the 12th Train Battalion will have to mobilise :—

- 1 Battalion staff.
- 8 Provision columns.
- 8 Wagon park columns.
- 1 Field bakery column of increased strength.
- 4 Bearer companies.
- 1 Horse depôt of increased strength.
- 1 Wagon park column for line of communications work.
- 1 Reserve bakery detachment for line of communications work.

If the 25th and one of the divisions of the 15th Army Corps are formed into a new Army Corps, the Hessian Company and the 15th Battalion will between them have to furnish, in addition to those already laid down for those units :—

- 1 Battalion staff.
- 2 Provision columns.
- 3 Wagon park columns.
- 2 Bearer companies.
- 1 Wagon park column for line of communications work.
- 1 Reserve bakery detachment for line of communications work.

Each battalion mobilises also a certain number of units for the lines of communication, field reserve, and Landwehr troops.

The battalion staff retains the number of the battalion and marches with the headquarters of the Army Corps, except when, on the march or in cantonments, the battalion commander may be placed in command of a large fraction of the train of the corps, when he marches with that fraction.

The five Provision Columns are numbered in each battalion, thus: 1st Provision Column, 3rd Army Corps. The five together carry about four days' rations for the Army Corps, and these are looked upon as a reserve only to be drawn upon when local resources are insufficient to feed the troops. On the march, the principal functions of the provision columns are to furnish the supplies for the troops when the latter are closely concentrated, as on the eve of a battle. When the army is halted, their wagons are used for the transport of supplies from the railway stations and magazines to those troops which have exhausted their reserve rations. When returning empty after an engagement, the wagons may be utilised as carriage for the wounded, or when the troops are halted they may be used as carriage for sick not attacked by contagious diseases. Their utilisation for any other purposes than these requires the consent of the Army Corps Commander.

The Wagon Park Columns are numbered in the same way as

the Provision Columns, those for the lines of communication being designated "Etappen Wagon-park Column of the —th Army Corps." They are moveable magazines destined to fill up the provision columns or to take their place as far as concerns the supplies, such as oats, not usually carried in the provision columns. The wagons may be used for the transport of sick and wounded. These columns are composed of soldiers of the train, but the horses, harness, and carriages are obtained by requisition.

A Field Bakery Column is named "Field Bakery Column of the —th Army Corps," and is divided into two sections. The 1st section bakes the bread and biscuit when these cannot be otherwise procured; the 2nd section takes charge of the slaughter cattle, slaughters them, and distributes the meat. Three kinds of ovens are used in the German Army, viz.:—1st. The Artmann ovens are made of bricks, in pairs. A pair can be made in 30 hours with 11,000 bricks. Four hours are required for baking. Each pair can turn out six batches of 700 3-lb. loaves in 24 hours. 2nd. The clay oven can be made in 18 hours, and can turn out 180 loaves at a time. Four hours are required for baking, therefore this oven can supply six batches of 180 loaves in 24 hours. 3rd. The iron oven requires 18 to 24 hours to prepare for work, but only three hours are required for baking; 270 loaves can be baked at a time, so that in 24 hours eight batches of 270 loaves can be turned out. On account of the length of time required to set up the ovens, the bakeries are seldom moved, but send their bread up after the corps by rail or road. When the bakery is not established, the men are employed in the magazines, cattle-parks, or as bakers with the troops. The field bakery columns are generally moved by rail or on requisitioned carriage.

The Bearer Companies are numbered—"1st Bearer Company of the —th Army Corps," &c. One of them is attached permanently to each division, and one is kept at the disposal of the Corps Commander and attached to the Corps Artillery. Each is divided into two sections, each complete in itself. The Bearer Companies follow the troops into action, and the Divisional Commander decides whether one or both sections are to establish dressing stations. When an action begins, the Bearer Company organises a central dressing station, marked at night by a red lantern, by day by two flags, one white with the Geneva Cross, the other of the national colours. Between this dressing station and the minor first-aid stations established by the medical officers attached to regiments, work the ambulance wagons of the bearer company, and its bearers, aided by those of regiments, search the field of battle for the wounded and bring them in to be dressed. Once their wounds dressed, the severely wounded are transported as soon as possible to the nearest field hospital on requisitioned wagons, those less severely wounded being sent by detachments on foot. The point where the central dressing station is to be established is

determined by the Divisional Commander after consultation with the Divisional Surgeon, and should not be far from the fighting line, but as a rule out of rifle range of the enemy. A farm or village is usually chosen, failing which the proximity of water is the first consideration. If the troops advance, one section may be pushed forward, the other following when its dressing station is emptied.

The Horse Depôts are meant to fill up losses in men and horses with the troops, and to take over any supernumerary men and sick or supernumerary horses not required by the latter, as well as horses captured in action or obtained by requisition.

The following are the war strengths of the various units* of the train of an Army Corps:—

Battalion staff:—

Field Officer commanding	1
Second Lieutenant as Adjutant	1
Total officers	2
Medical officers	4
Under-officer as clerk	1
Lance-corporals	4
Officers' servants	7
Drivers	5
Total N.-C. officers and men	17
Horses—Officers' riding	9
Troop riding	5
Draught	10
Total horses.. ..	24
2-horsed baggage wagon	1
2-horsed provision wagons	4
Total carriages	5

* The Reserve Bakery Detachments were first mentioned in the new "Kriegs-Etappen-Ordnung" of 1887. Their strength is not given, but it is probably equal to that of a field bakery column.

WAR STRENGTH OF TRAIN UNITS OF AN ARMY CORPS.

Ranks.	Provision Column.	Wagon Park Column.	Field Bakery Column.	Bearer Company,	Horse Depôt.	Hessian Field Bakery.	Hessian Horse Depôt.
Captain	1	1	..	1	1	..	..
1st Lieutenant .. ..	..	..	} 1	2	{ 1 }	1	1
2nd Lieutenant	1	1					
Total officers	2	2	1	3	2	1	1
Medical officers .. ..	..	..	..	7	..	..	..
Paymaster	1	1	1	1	1	..	..
Apothecary .. ..	..	..	..	1	..	..	..
Veterinary Surgeon	1	1	..	..	1	..	1
Total officials	2	2	1	2	2	..	1
Sergeant-major	1	1	1	1†	1	..	..
Under-officers	10	12	1	18§	5	3	3
Trumpeters or buglers	2	2	2†	2	..	..	..
Lance-corporals	16*	10	1	3	5	..	..
Privates	73	102	6	14	93	6	50
Soldier servants	3	3	2	12	3	1	1
Farrier	1	1	..	..	1	..	1
Hospital assistants .. ..	..	..	..	18	..	..	..
Stretcher bearers .. ..	..	..	..	166	..	..	..
Tradesmen	8	7	100†	7	3	43	..
Total N.-C. officers and men	114	138	113	239	111	53	55
Riding horses :—							
Officers and officials	5	5	8	13	5	2	2
N.-C. officers and men	22	26	2	6	92	1	} 97
Draught horses	130	164	8	26	100	8	
Spare horses	10	10	2	2	4	..	..
Total horses	167	205	15	47	201	11	99
Carriages :—							
2-horse .. ..	..	82	..	13	2	..	1
4-horse	31	..	2	..	..	2	..
6-horse	1	..	..	..	..	..	..
Total carriages	32	82	2	13	2	2	1

* 8 Dismounted.

† Of the 102 buglers and workmen 78 are bakers, 9 butchers, 8 masons, 1 smith, 1 carpenter, 1 cooper, 1 wheeler, 1 saddler, 1 tailor, 1 shoemaker.

‡ Of the bearer company.

§ Three of the train, 15 of the bearer company.

The carriage of a *Provision Column* is composed of 30 provision wagons and 1 reserve wagon with 4 horses each, and 1 field forge with 6 horses. The provision wagons (*Proviant Wagen*), 1867 or 1873 pattern, are similar to the battalion baggage wagon described at page 81, and weigh about 20 cwt. 3 qrs.

with a carrying capacity of about $16\frac{1}{2}$ cwt. The load may be entirely of one description of article, or it may be composed of all the elements of a ration. In the former case, according to Bronsart von Schellendorf, a wagon can carry—

14 Bags of salt	34,720 rations.
or 9 Bags of rice	7,200 "
„ 9 Bags of dried vegetables ..	3,600 "
„ 1,870 lbs. of bacon	5,000 "
„ 1,400 lbs. tinned meat	3,500 "
„ 16 Bags of coffee. . . .	32,000 "
„ 9 Boxes of biscuit	1,350* "

The load of a column would therefore be—

1 Wagon with salt	34,720 rations.
1 „ coffee	32,000 "
2 Wagons with rice	14,400 "
3 „ preserved vegetables	10,800 "
2 „ bacon	10,000 "
4 „ tinned meat. . . .	14,000 "
17 „ biscuit	22,950 "

or about 23,000 complete rations, except bread and fresh meat, which are seldom carried in the wagons. If 2,000 rations of bread are baked, the rations will be sufficient for 25,000 men. Thus, as in war the troops are never up to full strength, the five provision columns of an Army Corps can carry rations for it for four days.

If each wagon is packed with all the articles making up the ration, it will hold:—

1 Bag of salt	2,480 rations.
1 Bag of rice or 2 of dried vegetables	800 "
5 Boxes of biscuit or $180\frac{1}{2}$ lbs. bacon	750 "
3 Boxes of tinned meats	750 "
1 Bag of coffee	2,000 "

or 750 rations complete, with an excess of salt and coffee. Thus a column would carry 22,500 complete rations.

If, exceptionally, oats have to be carried in a provision column, each wagon can take 11 bags of 165 lbs. each, giving about 150 rations.

All the wagons of a provision column are loaded in one way or in the other, the columns which have to issue their stores directly to the troops being generally loaded on the mixed-load system, as the distribution is in this case easier.

Bread is not, as a rule, carried by provision columns, but if it is it must be at least 48 hours' old, and 600 loaves can be packed in a wagon.

* According to Fröhlich, the 1867 pattern wagons hold 9 boxes, the 1873 pattern 10 boxes of biscuit.

The Reserve Wagon is the same as the provision wagons, and carries baggage, workmen's tools, &c.

The Field Forge is much the same as that in use in the artillery, a coal-box taking the place of the limber-box.

On the carriages of a provision column are carried 10 shovels, 9 pickaxes, and 32 hatchets.

A *Wagon Park Column* has 80 two-horsed wagons with ladder sides (*Leiterwagen*) and 2 two-horsed baggage wagons. The ladder wagons are not regulation carriages, but are requisitioned and purchased on mobilisation. Their loads may be:—

16 Bags of salt	39,680 rations.
Or 10 Bags of rice	8,000 ..
„ 10 Bags of preserved vegetables ..	4,000 ..
„ 2,200 lbs. of bacon. . . .	5,882 ..
„ 17 Boxes of tinned meats. . . .	4,250 ..
„ 8 Boxes of biscuits. . . .	1,200 ..
„ 20 Bags coffee	40,000 ..

Mixed loads are seldom necessary in these columns, but if such were adopted a ladder wagon could carry 800 rations. Each could carry 13 bags of oats or 177 rations. The five columns of an Army Corps could therefore carry 9 days' rations or 5 days' oats.

On the wagons of a wagon park column are carried 22 shovels, 22 pickaxes, and 22 hatchets.

It is stated that wagons are being constructed for the wagon park columns which will avoid the necessity for requisitioning carriage.

The material of a *Field Bakery Column* consists of an utensil and tool wagon and a reserve wagon, both four-horsed. The former is similar to a provision wagon, and in the latter baggage, &c., is carried. The camp entrenching tools consist of 1 shovel, 1 pickaxe, and 2 hatchets.

A *Bearer Company* has 8 ambulance wagons, 2 medical store wagons, and 2 baggage wagons, all two-horsed.

The ambulance wagons are of three patterns, 1870, 1872, and 1874, and weigh from 13½ to 15 cwt. They are lock-under wagons, provided with springs and a break, and can carry 2 severely wounded men or 3 slightly wounded. The box is in two parts, the lower for carrying the knapsacks, &c., of the wounded, tools, and the lanterns, the upper, on which is painted the red cross, for stores and forage. The wagon has skeleton sides and a roof with curtains. Five stretchers are carried below, as also 2 water barrels. Each wagon has a red cross flag.

The medical store wagon, 1867 pattern, is similar in form to that of the same name described at page 82. The fore-carriage has four compartments, two below the foot-board, and two others below the seat, the former opening to the sides, the latter to the front. The rear-carriage boxes open to the rear by doors, and

the roof is prolonged to the rear so as to give cover from rain to the person working there. On the roof are carried heavy stores, such as amputating tables, utensil boxes, &c., and inside are packed medicines, apothecary's utensils, surgical instruments, bandaging materials, 5 blankets, 1 bucket, 2 coffee mills, 6 hand lanterns, &c. The weight of the wagon empty is $13\frac{1}{4}$ cwt., and its load weighs 8 cwt.

The baggage wagons are similar to the staff baggage wagons, but have a box on the top for resin torches. They carry each 2 tents for dressing stations, besides baggage, &c.

Each bearer company has 56 stretchers, the poles of which fold up in the middle, and which are connected at the head and foot by cross-pieces.

On the wagons of a bearer company are carried 2 shovels, 1 pickaxe, 12 hatchets, and 1 axe.

The wagons of a *Horse Dépôt* are both baggage wagons, and on them are carried 2 shovels, 2 pickaxes, and 6 hatchets.

From a comparison of the peace and war establishments of the train battalions, it will be seen how enormous is the expansion of this arm on mobilisation. Exclusive of grooms for officers and drivers to be supplied for staffs, &c., each battalion has to mobilise the following troops for its own Army Corps (normal, with 2 divisions), exclusive of any reserve formations:—

WAR STRENGTH OF TRAIN BATTALION.

	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.	Horses.
Battalion staff	2	4	..	17	24
5 Provision columns ..	10	..	10	570	835
5 Wagon Park columns ..	10	..	10	690	1,025
1 Field Bakery column ..	1	..	1	113	15
3 Bearer companies ..	9	21	6	711	141
1 Horse dépôt	2	..	2	111	201
Total	34	25	29	2,218	2,241

The peace establishment is—

14 1 2 315 192

so that from the resources of the reserve, &c., there are required:—

20 Officers.
24 Medical officers.
27 Officials.
1,903 Men.
2,049 Horses.

CHAPTER XII.

FIELD RESERVE TROOPS.

THE field reserve troops, which are destined to immediately support the active troops, and, if necessary, take their places alongside them in line, are formed of those men of the standing army and its reserve who are not absorbed by the formation of the field troops and the cadres of their depots, and of the men of the 1st Ban of the Landwehr, the youngest classes being taken first. No cadres exist for them (except in the case of the artillery) in peace, for the permanent staffs of the Landwehr battalion districts cannot be considered as such, and therefore part of the cadres are furnished by the regular army on mobilisation, the remainder being filled up by officers and non-commissioned officers of the reserve and Landwehr, and the cadres thus formed form corps for promotion for the duration of the war. The troops thus formed would mostly be grouped into "Reserve Divisions," and, though they would not be provided with artillery to the same extent as the first line troops, there is no doubt that the Germans intend to make a much more extended use of their reserve troops in future than they have been accustomed to do in the past, and that the latter will relieve the active troops of a number of duties, such as those of sieges, corps of observation or blockade, &c., and thus set free a greater number for operations in the field. In fact, the distinction between line and Landwehr has been lessened, and the tendency is to put both together into the first line in pursuance of the great rule of being as strong as possible at the decisive point at the earliest possible moment.

Jealously guarded as is the secrecy of the German plan of mobilisation, it is evidently impossible to arrive at the exact number of units which can be mobilised, but a close approximation can be arrived at by the simple process of considering the number of trained men available.

A. INFANTRY.

(a.) "*Reserve Regiments.*"

The basis on which, as a rule, the field reserve battalions would be formed would be that of the Landwehr Battalion Districts, of which, generally, two correspond to each line regiment, the total number being 277 districts, of which, however, one is supposed to form four battalions and two others two battalions each (see Chapter V). It would be wrong, however, to

consider that those 282 battalions represent the sum of the field reserve battalions available, for the following reasons :—

(a.) The Guard Regiments, the Bavarian Body Guard, and 4th and 8th Regiments, and the 100th, 101st, and 109th Grenadiers have no Landwehr Districts corresponding to them, but recruit generally.

(b.) The 11 districts of the 15th Army Corps cannot yet form units of their own, but their men would be dispersed over the other districts.

It appears, therefore, to be more in accordance with the reality if we count two field reserve battalions for each regiment of infantry, and this is the more likely basis of formation, as by this means the men composing each unit will have previously served together, and there will be more *esprit de corps*, a feeling sedulously fostered in the German Army. To this rule there must also be exceptions as follows :—

(a.) The regiments formed in 1881 and since then (97th to 99th, 128th to 139th, and 18th Bavarian) cannot at present form field reserve battalions, no men having been passed into the Landwehr by them till 1887-8, in the case of those formed in 1881, except the men transferred to them from other regiments on their first formation.

(b.) The 116th Regiment, which had only 2 battalions till 1881, can only form 1 field reserve battalion.

(c.) In the Prussian Guards, with the exception of the Fusilier Guards, each regiment has three sergeants to look after the stores and lists of the Landwehr, and the presumption is that each of the eight will form a field reserve regiment of three battalions.

The total number of field reserve battalions which can at present be formed is therefore—

AVAILABLE NUMBER OF FIELD RESERVE BATTALIONS.

Corps.	Regiments of the Standing Army.	Number of Field Reserve Battalions.
Guard.	9.. .. .	24
I.	10 (including 128th)	18
II.	10 (including 129th)	18
III.	9 (including 60th, detached to 15th Corps).. ..	18
IV. {	10 (including 31st, detached to 9th, and 67th detached to 15th Corps)	20
V.	9.. .. .	18
VI.	9.. .. .	18
VII.	9 (including 17th, detached to 14th Corps).. ..	18
VIII.	9 (including 25th, detached to 14th Corps).. ..	18
IX.	7.. .. .	14
X.	7.. .. .	14
XI.	9 (including 82nd, detached to 10th Corps).. ..	18
XII. {	12 (including 133rd, 134th, and 139th, besides 106th detached to 15th Corps)	18
XIII.	8 (including 126th, detached to 15th Corps)	16
XIV.	6.. .. .	12
XV. {	10 (including 97th, 98th, 99th, 130th, 131st, 132nd, 135th, 136th, 137th, 138th) .. .. .	..
25th Div.	4 (including 116th)	7
I Bav.	10 (including 4th, detached to 15th Corps)	20
II Bav. {	9 (including 8th, detached to 15th Corps, and 18th Regiment)	16
Total ..	166.. .. .	305

These battalions would, in the case of line infantry, be grouped into regiments of 3 or more battalions, all the battalions of one brigade forming a regiment together and bearing the number of that brigade. Thus the field reserve battalions formed by the 8th and 48th Regiments (9th Brigade) would form the 9th Field Reserve Regiment. The typical field reserve regiment will have four battalions. The Guard Regiments will bear the names 1st Guard Field Reserve Regiment, &c., and will only have three battalions.

When the organisation of the army reaches its full development, there will be formed:—

8 Guard Landwehr Regiments = 24 battalions.
 157 Line, &c., regiments of 2 battalions = 314 „

Total 338

Military writers are generally agreed that two field reserve divisions will be formed by the Guard Corps, and the 1st to 14th and 1st and 2nd Bavarian Corps will each form a field reserve division of four regiments (six probably in the case of the 11th Corps with the 25th Division). There is nothing to lead us to suppose that all the divisions will be of an uniform type, indeed the practice of the 1870 campaign goes to prove that this will not be the case. When the organisation of the

Army is fully developed, as it will be, as far as the 1st Ban of the Landwehr is concerned, in 1898, each Corps will furnish a field reserve division, and the Guard, 11th, and 12th probably two such each.

The strength of a mobilised company would be:—

Captain	1
1st Lieutenant	1
2nd Lieutenants	3
Total officers	5
Sergeant-major	1
Vice-sergeant-major	1
Sergeants	4
Under-officers	12
Drummers and buglers	4
Lance-corporals and privates	178*
Total N.-C. officers and men, combatants	200
Captain's groom	1
Train drivers	2
Hospital assistant	1
Total non-combatants	4
Total N.-C. officers and men	204
Officers' horses	2
Draught horses	4
Total horses	6

with 1 company baggage wagon, and 1 provision wagon.†

The staff of a battalion would be composed of—

Field Officer Commanding	1
Lieutenant as Adjutant.	1
Total officers	2
Medical officers	2
Paymaster	1
Armourer	1
Under-officer as clerk	1
Under-officer as drum-major	1
Total N.-C. officers, combatants	2
Officers' grooms	6
Train drivers	6
Total men, non-combatants	12
Total N.-C. officers and men	14
Officers' horses	8
Draught horses	12
Total horses	20

* Four equipped as stretcher-bearers.

† The reserve troops would probably retain the old pattern material (see Chapter VI), except the canteen wagons.

Two-horsed medical store wagon	1
Four-horsed battalion baggage wagon	1
Six-horsed ammunition wagon	1
Total carriages	3

The total strength of a four-company battalion would therefore be:—

Officers	22
Medical officers	2
Officials	2
N.-C. officers and men, combatants	802
Non-combatants	28
Horses	44
Carriages	11
	890

A regimental staff would comprise:—

Field Officer Commanding	1
Lieutenant as Adjutant.. ..	1
Total officers	2
Under-officer as clerk	1
Transport drivers	2
Officers' servants.. ..	4
Total men, non-combatants	6
Total N.-C. officers and men	7
Officers' riding horses	8
Draught horses	4
Total horses.. ..	12
Two-horsed baggage wagon	1
Two-horsed provision wagon	1

The total strength of a typical reserve regiment of 3 or 4 battalions would therefore be:—

	3-btn. Regt.	4-btn. Regt.
Officers	68	90
Medical officers	6	8
Officials	6	8
N.-C. officers and men, combatants.. ..	2,407	3,209
Non-combatants	90	118
Horses.. ..	146	188
Carriages	85	46
	2,497	3,327

Of the men, 2,328 or 3,104 would be armed with rifles, and 48 or 64 respectively would be equipped as stretcher-bearers. The senior battalion surgeon would act as regimental surgeon.

(b.) *Fourth Field Battalions.*

In various German papers it is assumed that "Fourth Field Battalions" would be formed for a certain number at least of the active regiments, but little has ever been said as to their employment in the field. As, however, in the reorganisation of 1887, fourth battalions were raised for a certain number of

regiments, it appears probable that such battalions as are formed will actually join the other three battalions of their regiments as soon as possible.

From the table on page 59, it will be seen that the regiments on the lowest establishment have each at present $3 \times 2048 = 6144$ trained men (not including 2nd Ban Landwehr) at their disposal. To mobilise the regiment and two field reserve battalions there would be required :—

For the line regiment ..	3,107 N.C.O. and men.
For two reserve battalions	1,660 „
<hr/>	
Total ..	4,767 „

This would leave a balance of 1,377 trained men available, which would easily permit of the formation of a fourth battalion in every regiment. As, however, a number of those men would be absorbed by the dépôts, hospital assistants and stretcher bearers to be handed over to the train formations, staff guards, &c., it appears to be improbable that all regiments would form fourth battalions, but an average of six fourth battalions for each of the 1st to 14th and 1st and 2nd Bavarian Army Corps and two for the 25th Division appears to be within the mark. The Guards, on account of their forming three reserve battalions per regiment, and the regiments raised since 1881 and forming the 15th Army Corps could form no such battalions. Thus the total number of 4th battalions to be formed would be 98, from which the 15 already existing 4th battalions have to be deducted, leaving 83 to be formed on mobilisation.

When the present organisation has reached its full development, the regiments on the lowest establishment will each dispose of 6,468 trained men, and then, doubtless, all regiments, except those of the guard, will form 4th battalions, if such have not already been formed in peace time.

The 4th battalions will probably be formed by the dépôt battalions in the first instance, and, when their organisation is completed, will be sent off to join the regiments, the dépôts being again brought up to their established strength. Their formation, however, will not prevent the Ersatz Reserve men being at once called in to the dépôts.

The strength of such a battalion would be the same as that of an active battalion, viz. :—

- 22 Officers.
- 2 Medical officers.
- 2 Officials.
- 1,002 N.-C. officers and men, combatants.
- 28 Non-combatants.
- 44 Horses.
- 14 Carriages (2-horsed).

B. RIFLES.

According to German military writers, every battalion of rifles forms a reserve company of the same strength as a reserve company of infantry. It is evident, however, that a rifle battalion could do a good deal more than this, for each disposes of 2,048 trained men, which leaves 1,018 over after the active battalion of 1,030 men has been mobilised. Each could therefore form a complete reserve battalion of 830 men and still have 188 men over. This would, however, draw on the oldest classes of the 1st Ban of the Landwehr, and, as the duties of rifles are such as demand quickness, agility, and skill in the use of the rifle, it is unlikely that the resources of the rifle battalions would be drawn upon for their own particular duties to such an extent. The depôts of the rifles also require to be made up of especially good men to keep up the special character of the battalions, and for all those reasons, it is improbable that more than 2 reserve companies would be formed by each rifle battalion (except in times of great emergency), which would be combined into 10 battalions, thus enabling 10 of the 18 Reserve Divisions to receive a rifle battalion, which would be about the same proportion as in the standing army.

The strength of a battalion of field reserve rifles would be the same as that of a field reserve infantry battalion, but it would have 2 2-horsed baggage wagons and 1 provision wagon per company, and 2 2-horsed wagons for the battalion staff, or a total establishment of:—

- 22 Officers.
- 2 Medical officers.
- 2 Other officials.
- 802 N.-C. officers and men, combatants.
- 28 Non-combatants.
- 44 Horses.
- 14 Carriages.

C. CAVALRY.

Each German cavalry regiment has at its disposal 1,617 trained men, without counting the three and four-year volunteers, of whom a large number serve in this arm, or men of the 2nd Ban of the Landwehr. At least 30 volunteers are placed in the ranks each year, which brings the total number of recruits enrolled up to 180 in each year, giving at the end of 12 years 1,926 men, so that the actual numbers are far above those stated at page 59. It is therefore evident that after mobilising the regiment, and forming a dépôt squadron of men who have but lately left the ranks, a German cavalry regiment could easily form a reserve cavalry regiment. This, however, does not appear to enter into the calculations of the German military authorities, and numerous other considerations come into play. Firstly, the number of trained riding horses to mount this large number of

regiments would not be available. Secondly, regiments composed of men who had long been unaccustomed to horseback exercise, would be of little value for a considerable period for active operations. Thirdly, the regular cavalry is very numerous. Lastly, the train and ammunition columns have to look to the cavalry reserve to a large extent for their drivers.

For all these reasons it is believed that each cavalry regiment would only call up men enough from the youngest classes of its reserve to form one or, at the outside, two squadrons, so as to provide the field reserve division of the army corps with a 4-squadron regiment, and furnish two squadrons for duty with the Landwehr troops of the army corps. Thus 18 reserve cavalry regiments and 36 squadrons would have to be formed. The reserve regiments would be mobilized at the headquarters of one or other of the cavalry regiments of the army corps.

These regiments would have exactly the same strength as a mobilised cavalry regiment, and would be fed by the *depôt* of the cavalry regiment forming them, for which purpose an addition is made to its *depôt* squadron (Chapter XIII). They would be numbered consecutively by arms, would be of the same arm as the regiment at whose headquarters they were mobilised, and would wear its uniform with the Landwehr cross.

D. FIELD ARTILLERY.

As already mentioned in Chapter VIII, the 7th and 8th Field Batteries of the regiments having horse artillery batteries in the Guard, 1st to 12th, and 1st and 2nd Bavarian Army Corps, are destined on mobilisation to be broken up and expanded into batteries for the reserve troops. In the 13th and 14th corps, special formations will have to be made, or possibly, though improbably, one of the *Abtheilungen* may be utilised for the purpose.

It appears probable that each Reserve Division will receive a regiment of 6 field batteries in 2 *Abtheilungen*, and an *Abtheilung* of ammunition columns consisting of 2 artillery and 2 infantry columns.

That the formation of this number of reserve units in a normal Army Corps is perfectly possible will be seen from the following figures:—

Of the 20 batteries of an Army Corps—

14 Field batteries have 323 trained men	..	..	..	4,522
2 Field batteries (raised 1881) have 176 trained men	..	..	..	352
1 Field battery (raised 1887) has ? trained men	..	..	..
3 Horse batteries have 269 trained men	..	..	..	807
Total				5,681

The requirements on mobilisation are:—

2 Regiments divisional artillery ..	2,110	men	
1 Regiment corps artillery ..	2,767	„	of whom 830 train drivers.
1 Battery horse artillery (attached to cavalry)	164	„	
1 Reserve regiment of 6 batteries	1,055	„	
1 <i>Abtheilung</i> of columns for Reserve Division	718	„	of whom 330 train drivers.
Total	6,814	„	of whom 1,160 train drivers.

leaving a total of 5,654 artillerymen required. There being 5,681 artillerymen available, a balance of 27 is left over. The above figures are not strictly accurate, as the non-commissioned officers of the peace cadres are not counted extra, and, in the war requirements, the train drivers of the various staffs and officers' grooms are included, but they suffice for the purpose of showing that the required number of units could be raised. When the reorganisation has reached its full development, the number of men available over and above the requirements will be greatly increased.

The number of units of reserve field artillery to be formed for the 18 Reserve Divisions will be :—

18 Regiments = 36 *Abtheilungen* = 108 field batteries.

18 *Abtheilungen* of ammunition columns = 36 infantry and 36 artillery columns.

The establishments of all units of the reserve field artillery would be exactly the same as those of the corresponding first line units given in Chapter VIII. The regiments of field artillery would be named "Field Reserve Regiment (No.) of the Army Corps," and the *Abtheilungen* of ammunition columns "Column *Abtheilung* of the Reserve Division."

E. PIONEERS.

On mobilisation, each battalion of pioneers forms a field reserve company. The Guard Battalion would furnish two such companies for the two Guard Reserve Divisions, the 16th Battalion would not furnish any field reserve company, and the 15th Battalion, in consideration of its having to furnish the pioneers for a 16th Army Corps, would not probably form a reserve company. The total number of reserve companies would therefore be 18, which would permit of each reserve division receiving one such company. With each company would also be mobilised a divisional bridge train.

The number of men at the disposal of the pioneers is amply sufficient for all such formations. Each battalion has at its disposal, exclusive of men of the 2nd Ban of the Landwehr, 1,725 trained men (2,156 in the Bavarian battalions). For the formations of the mobile Army Corps (see Chapter X), it requires 938 men, of whom only 675 are trained pioneers. For the two siege companies, 422 men would be taken, leaving a balance of 628 men for reserve formations and depôts. It is evident, therefore, that not only could the pioneers mobilise the

reserve companies required, but that they could form a considerable number of extra companies, either reserve or fortress, as required.

The reserve pioneer companies and bridge trains would have the same strength as those of the corresponding units of the active army.

F. TRAIN.

From the table on page 60 it will be seen that in the army, reserve, and 1st Ban of the Landwehr, there are available 43,609 trained men of the train. The total requirements for the field army and for all dépôts are 95,211—10,944 (Landwehr) = 84,267. From these must be deducted 28,704—4,068 (Landwehr) = 24,636 men for stretcher bearers, medical *personnel*, bakers, &c., supplied from the furloughed lists of the infantry, and there should be added 6,525—612 (Landwehr) = 5,913 train soldiers employed in the staffs, so that the total requirements are 59,631 men. To fill up the train formations of the field army and the dépôts, the 2nd Ban of the Landwehr (see page 160) will have to be dipped into, and the balance will be made up from the cavalry furloughed lists. A summary of train requirements is given at page 296.

For each of the 18 Reserve Divisions there will have to be formed 2 reserve provision columns and 1 reserve bearer company, besides 3 reserve field hospitals. These units would have the same strengths as the corresponding units of the active army. (See Chapters XI and XXIII).

CHAPTER XIII.

DEPÔT TROOPS (ERSATZ-TRUPPEN).

DEPÔT troops are intended to make good the losses in men, horses, and material suffered by the corresponding active troops, and to serve as a nucleus for new formations. No cadres are kept up for them in peace, except in the cavalry, in each regiment of which one of the five squadrons is detailed in the plan of mobilisation as dépôt squadron.

For the subordinate cadres of the dépôt troops, the corresponding active units give up a few non-commissioned officers selected as good drill-instructors or as less fitted for active service, and the ranks are filled up by:—

(a.) Recruits of the standing army who have served less than 2 months in the train, 3 months in the infantry and foot artillery, and 6 months in the other arms.

(b.) Ersatz Reservists.

(c.) Men of the active unit who for the moment are unfit to take the field.

(d.) The tradesmen of the active unit who join the detachment of tradesmen formed at the depôt.

The officers are composed of a few officers of the active army, the remainder being officers of the reserve or Landwehr with sergeant-major-lieutenants in the junior grades.

As a rule, when the effective of a regiment, &c., is diminished by 5 per cent., a requisition for reinforcements is sent direct to the depôt, on receipt of which the officer commanding the depôt informs the territorial authorities of the date on which the detachment can start, and those arrange for its transport to the nearest station under the lines of communication authorities. The men of such detachments are always sent completely armed and equipped, and provided with ammunition and iron rations. As a rule, infantry, rifles, pioneers, and all staffs would make good their losses in horses from the horse depôt of the train battalion of the Army Corps, but the horses required by the cavalry, artillery, and train would be sent from the depôts with saddlery or harness complete. If the depôt of a regiment is unable to comply with the demands on it, the General Commanding the mobile Army Corps may request the territorial authorities to cause the deficiencies to be made good from another depôt of the same arm.

As reinforcements are sent off to the troops in the field, the depôts are brought up to strength again by calling in men of the Ersatz Reserve, Landwehr, or recruits of the coming yearly contingent. To enable the depôt cadres to devote themselves to drill and instruction, they are relieved, as far as possible, from all garrison duties. When a fortress is menaced with investment, all the depôt troops in it are at once sent away and distributed over the territory so as to be able to continue their duties. All depôts are formed at regimental peace headquarters, and take over charge of all stores.

In 1870 the North German depôt troops were formed from supernumerary reserve men, the youngest classes of the former 1st Class Ersatz Reserve, and the youngest classes of the Landwehr, besides a considerable number of volunteers. From the beginning of September, men of the older classes of the Landwehr were called in, and the yearly contingent for 1870-71 was called out. During the war, up to the beginning of March 1871, the German Army drew from its depôts 2,172 officers, 220,590 men, 22,012 horses, and 116 field guns.

A. INFANTRY.

Each regiment of field, field reserve, or Landwehr infantry forms a depôt battalion. In those line regiments (98) assumed to mobilise four battalions (see page 143), the depôt battalion would have five companies. The depôt battalions of all other Guard, Line, Field Reserve, and Landwehr regiments would probably only have four companies, but, if the establishment

is exceeded by 300 men, a fifth company may be formed. Each battalion has a detachment of tradesmen attached to it.

The strength of a company of a Dépôt Battalion of the Guard is—

Captain	1
1st Lieutenant	1
2nd Lieutenants or Sergeant-Major-Lieutenants	2
Total officers	4
Sergeant-major	1
Vice-sergeant-major	1
Sergeants	4
Under-officers	14
Drummers and buglers	4
Lance-corporals and privates	226
Total N.-C. officers and men, combatants	205
Hospital assistant	1
Total N.-C. officers and men	251
Officer's horse	1

A company of the line has 4 under-officers, 1 drummer, and 45 privates more than a company of the Guard, and therefore numbers 301 non-commissioned officers and men.

The staff of a battalion consists of 1 field officer in command, 1 2nd lieutenant as adjutant, 2 medical officers, 2 paymasters, 1 armourer, 1 under-officer as clerk and 1 under-officer as drum-major, with 3 officers' horses.

The detachment of tradesmen consists of 1 officer in charge, 11 under-officers, and 200 tradesmen, of whom 100 are tailors and 100 shoemakers. The strengths of battalions on the various establishments are therefore as follows:—

	Officers.	Medical Officers.	Officials.	N.-C. officers and men.			Officers' Horses.
				Comb.	Non-Comb.	Total.	
Guard Battalion of 4 companies ..	19	2	3	1,013	204	1,217	7
Line " 5 " ..	23	2	3	1,513	205	1,718	8
" " 4 " ..	19	2	3	1,218	204	1,417	7

In 1870, the number of officers of the active army left with the dépôts of regular regiments varied from 2 to 11, the average being about 8, and that of reserve and Landwehr officers employed varied from 3 to 13, giving an average of from 6 to 7. A certain number of dépôts received from 1 to 3 officers "at disposal," but from the above figures it will be seen that the establishment

of officers can rarely have been reached. In future this will be avoided by the employment of the sergeant-major-lieutenants, than whom there could not be better drill-instructors for young soldiers.

From the figures in Chapter XII it will be seen that when the field, field reserve, and Landwehr formations have been mobilised, but few trained soldiers will be left to join the dépôts. These will, therefore, consist, until the arrival of the next contingent of recruits, almost exclusively of Ersatz Reserve men and volunteers. The number of the former who have gone through a certain amount of training up to 1887 is 148,026, of whom about 120,000 belong to the infantry, so that each dépôt battalion of the standing army will receive about 800 partially trained men, a figure which will yearly increase. The dépôts of the field reserve and Landwehr regiments will be made up of the older classes of each, or of men less fit to take the field, or of men of the Landsturm.

B. RIFLES.

Each rifle battalion forms a dépôt company, the strength of which would be:—

Officers	4
Medical Officer.. .. .	1
Paymaster	1
N.-C. officers	22
Aspirant paymaster	1
Buglers	4
Lance-corporals and privates	223
Total N.-C. officers and men, combatants	250
Hospital assistant	1
Total N.-C. officers and men	251
Officer's horse	1

To each would be attached a detachment of tradesmen consisting of 4 under-officers and 63 men.

The dépôt companies of the two Guard battalions would be formed into an *Abtheilung*.

In the event of field reserve battalions of rifles being mobilised, dépôts of similar strength to the above would be formed for them, but these would have neither medical officer, paymaster, nor aspirant paymaster, as they would be attached to existing companies.

C. CAVALRY.

The squadron of each regiment which is broken up to mobilise the other four forms a *depôt* for the regiment during the war. Its establishment is—

Officers	5
Medical officer	1
Veterinary Surgeon	1
Paymaster	1
Total officials	2
N.-C. officers	20
Aspirant paymaster	1
Trumpeters	3
Lance-corporals and privates	176
Total N.-C. officers and men, com- batants	200
Hospital assistant	1
Farrier	1
Total men, non-combatants	2
Total N.-C. officers and men	202
Horses	212

To each squadron is attached a detachment of tradesmen composed of 4 under-officers, 1 master saddler, 60 men. If a field reserve cavalry regiment is also mobilised by the regiment, the strength of the *depôt* squadron is augmented by 50 men and horses and that of the detachment of tradesmen by 34 men.

Unlike the *depôts* of the other arms, those of the cavalry would be entirely composed of men who had served their full time in the regiment or of recruits under six months' service. Ersatz Reserve men would not be required, nor does the cavalry train any such.

D. FIELD ARTILLERY.

Each regiment of field artillery forms a *depôt* for all the field, field reserve, and Landwehr formations mobilised by it, composed of an *Abtheilung* of two batteries,* with a staff and a detachment of tradesmen. In the 15 regiments which have *Abtheilungen* of horse artillery, one battery is a horse, the other a field battery; in the 14th and 25th Regiments, which have each a battery of horse artillery, one *depôt* battery is a field battery and the other has 2 field divisions and 1 division of horse artillery; and in the remaining 20 regiments both *depôt* batteries are field batteries. The following are the battery establishments:—

* Probably three in 28th Regiment.

† All three in 28th Regiment.

	Regiment with a Horse <i>Abtheilung</i> .		Depôt Battery of Regiment with Field Batteries only.	Mixed Battery.
	Horse Battery.	Field Battery.		
Officers	4	4	4	3
N.-C. officers	17	19	19	13
Trumpeters	2	2	2	2
Acting bombardiers, gunners, and drivers	119	193	143	100
Total N.-C. officers and men, combatants	138	214	164	115
Hospital assistant	1	1	1	1
Total N.-C. officers and men ..	139	215	165	116
Horses	118	68	68	68
Guns	6	6	6	6

The field depôt battery of the 14th Regiment would be on the higher, that of the 25th on the lower establishment for such batteries.

The staff of a depôt *Abtheilung* consists of 1 field officer in command, 1 2nd lieutenant as adjutant, 2 medical officers, 1 veterinary surgeon, 1 paymaster, 1 under-officer as clerk, 1 aspirant paymaster, and 1 farrier, with 4 officers', &c., riding horses.

The detachment of tradesmen attached to each *Abtheilung* is composed of 1 officer, 5 under-officers, 1 saddler, and 133 tradesmen.

The establishments of *Abtheilungen* are therefore :—

	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.
				Com-batants.	Non-Com-batants.	Total.		
Depôt of regiment with horse batteries ..	11	2	2	359	137	496	190	12
Depôt of regiment with field batteries only ..	11	2	2	335	137	472	140	12
Depôt of 28th Regiment ..	15	2	2	508	204	709	208	18
Depôt of 14th Regiment ..	10	2	2	336	137	473	140	12
Depôt of 25th Regiment ..	10	2	2	286	137	423	140	12

Each battery may exceed its establishment of gunners and drivers by 30 men, as appears very necessary when the great.

calls made on the artillery depôts are considered, and as is perfectly possible with the number of men available.

E. FOOT ARTILLERY.

No special depôts are formed for the foot artillery, as the battalions of Landwehr foot artillery not mobilised and retained in the home garrisons would serve as depôts for their corresponding mobilised line and Landwehr formations. At present, however, for each battalion of the 11th Regiment a depôt would have to be formed. Such a depôt would have the strength of a company and would be composed of :—

4 Officers.	
1 Medical officer	} in 1 company only.
1 Paymaster	
<hr/>	
31 N.-C. officers.	
3 Buglers.	
1 Aspirant paymaster (in 1 company only).	
228 Acting bombardiers and gunners.	
<hr/>	
263 N.-C. officers and men, combatants.	
1 Hospital assistant.	
<hr/>	
264 N.-C. officers and men.	
<hr/>	
1 Officer's horse.	
5 Under officers	} Detachment of tradesmen.
70 Men	

Such depôts would be composed in the lower ranks entirely of Ersatz Reserve men and recruits.

To each Landwehr battalion acting as a depôt a detachment of tradesmen, composed of 1 officer, 11 under-officers, and 200 tradesmen, would be attached.

F. PIONEERS.

Each pioneer battalion forms a depôt company with an establishment of :—

4 Officers.	
1 Medical officer.	
1 Paymaster.	
<hr/>	
31 N.-C. officers.	
4 Buglers.	
1 Aspirant paymaster.	
227 Lance-corporals and privates.	
<hr/>	
263 N.-C. officers and men, combatants.	
1 Hospital assistant.	
<hr/>	
264 N.-C. officers and men.	
<hr/>	
1 Officer's horse.	
5 Under-officers	} Detachment of tradesmen.
70 Men	

Each company receives 50 men of the Ersatz Reserve and the remainder would be made up of men of the Reserve

and Landwehr, of whom the pioneers would have a considerable excess after mobilising all the formations laid down for them.

G. RAILWAY TROOPS.

Since the recent augmentation (doubling) of the railway troops, no fresh figures have been published as to the establishments of their depôts. When the Railway Regiment had only two battalions it formed a depôt of two companies with a depôt store of railway material, the establishments of which together were:—

- 16 Officers.
- 1 Medical officer.
- 2 Paymasters.

- 85 N.-C. officers.
- 7 Buglers.
- 1 Aspirant paymaster.
- 318 Lance-corporals and privates.

- 411 N.-C. officers and men, combatants.
- 2 Hospital assistants.

- 413 N.-C. officers and men.

- 6 Officers' horses.

A detachment of tradesmen composed of 1 officer, 6 under-officers, and 100 men was attached.

In the absence of precise data, it may be assumed that the Railway Regiment will now form a depôt of about—

- 24 Officers.
- 2 Medical officers.
- 2 Paymasters.
- 800 Men of all ranks.
- 9 Officers' horses.

with a detachment of tradesmen of 1 officer, 11 under-officers, and 200 men, as in an infantry regiment.

No figures have ever been published for the establishment of the depôt of the Bavarian Railway troops, but it may be taken safely as one-eighth of the above, viz:—

- 3 Officers.
- 1 Medical officer.
- 1 Paymaster.
- 100 Men of all ranks.
- 1 Officers' horse.

with a detachment of tradesmen of 2 under-officers and 40 men.

H. TRAIN.

Each train battalion forms a depôt *Abtheilung*, consisting of a Staff, 2 companies, and a depôt of train material, with a detachment of tradesmen. The establishment of an *Abtheilung* would be:—

- 12 Officers.
- 1 Medical officer.
- 1 Veterinary surgeon.
- 1 Paymaster.

52 N.-C. officers.	
4 Trumpeters.	
1 Aspirant paymaster.	
446 Lance-corporals and privates.	
<hr/>	
508 N.-C. officers and men, combatants.	
<hr/>	
2 Hospital assistants.	
1 Farrier.	
2 Storekeepers.	
<hr/>	
5 N.-C. officers and men, non-combatants.	
<hr/>	
508 N.-C. officers and men,	
<hr/>	
51 Riding horses.	
160 Draught horses.	
40 4-horsed wagons.	

The detachment of tradesmen would comprise 1 officer, 7 under-officers, and 120 men.

The dépôt company of the Grand Ducal Hessian Train Company would be of about half the above strength.

Each dépôt *Abtheilung* receives at once 238 men of the Ersatz Reserve, the remainder being made up of reservists and Landwehr men of the train or cavalry.

In each Army Corps District there is formed an immobile Horse Dépôt (*Ersatz-Pferde-Dépôt*) of 300 horses, and for the Empire there are formed two central dépôts of 500 horses each. From these unforeseen wants are met, and the mobile Horse Dépôts are supplied if they cannot replace the horses they have had to give up by requisition or by capture from the enemy. Nothing is known as to the establishments to look after these dépôts, but it is supposed that dismounted dépôt squadrons (see Chapter XIV) would be formed for this purpose.

CHAPTER XIV.

GARRISON TROOPS (BESATZUNGS-TRUPPEN).*

THESE troops, for which (except in the case of the pioneers and field artillery) no cadres exist in peace, constitute in war the garrisons of the towns of the interior, of the fortresses, and of coast and inland defensive works. They may be also utilised in the field, and would certainly be so used in the event of the full strength of the Empire requiring to be put forth, even were the country not invaded. In any case the foot artillery siege and pioneer formations would, at least in part, be utilised in siege warfare. The men are, for the infantry and field artillery, those of the 2nd Ban of the

* The Germans count also as "garrison troops" the active battalions of foot artillery when placed on the war footing (see Chapter IX), and the siege companies of Pioneers (see Chapter X).

Landwehr, for foot artillery and siege pioneers those of both Bans of the Landwehr, for cavalry those of the youngest classes of the reserve, and, for the train, men from all furloughed classes of the cavalry and train. The officers' cadres would be composed of a few line officers, with reserve or Landwehr officers, or officers "at disposal" in the senior posts, and sergeant-major-lieutenants in the junior grades.

A. INFANTRY.

From the table on page 59, it appears that each regiment of infantry on the lowest establishment can dispose of, at present, $3 \times 772 = 2316$ men of the 2nd Ban of the Landwehr. Calculating, therefore, in the same manner as for Field Reserve troops, there can be little doubt that an equivalent number of battalions—305—to those of the Field Reserve troops could be formed by the 2nd Ban of the Landwehr, and that this figure will, from 1898, gradually increase till it reaches 338. The Guards might have some slight difficulty in forming 3 battalions per regiment, but it must be remembered that the Guard Fusiliers, apparently in pursuance of the old system of "Reserve Landwehr Battalions," abolished in February 1888, form no extra units of their own, and so their men would be available to bring the others up to strength, in addition to which the five senior regiments of the Guard have always had an increased establishment, and have therefore $3 \times 914 = 2742$ men of the 2nd Ban of the Landwehr each. It is, moreover, unlikely that special rifle battalions would be formed, so that the riflemen of the 2nd Ban of the Landwehr will be available for strengthening the infantry battalions.

Those troops would be organised in the same manner as the Field Reserve troops, *i.e.*, in a regiment of three or more battalions for each brigade, bearing the number of that brigade, and it is stated that such regiment would be designated "Landwehr Regiments," to distinguish them from the "Field Reserve Regiments." Their strength would be the same as that of field reserve regiments, but no transport would be provided unless they actually took the field.

In the event of their services being required in the field, 18 "Landwehr Divisions," of similar composition as regards infantry to the field reserve divisions, could be formed.

B. CAVALRY.

To provide for the "Landwehr Divisions" being put into the field, it would be necessary to form at least 2 squadrons of cavalry for each division, or a total of 36 squadrons. These would be furnished by the youngest classes of cavalry reservists (see Chapter XII). Dismounted squadrons of cavalry reserve men would probably also be formed to furnish the personnel for the Immobile Horse Depôts (see Chapter XIII).

C. FIELD ARTILLERY.

For sortie purposes in fortresses, field batteries would be required, and to make provision for them and for the 18 "Landwehr Divisions" eventually to be put in the field, it is probable that 18 *Abtheilungen*, each of 4 field batteries, and 18 *Abtheilungen*, each of 1 artillery and 2 infantry ammunition columns, would be organised. That the resources in men of the 2nd Ban of the Landwehr are ample for these purposes will be seen from the following figures:—

Of the 17 field and horse batteries of a normal army corps existing prior to 1881,

14 field batteries have each	122	=	1,708	men of the 2nd Ban of the Landwehr.
3 horse " " "	102	=	306	" " "
Total		=	2,014	" " "

The requirements are:—

1 <i>Abtheilung</i> of 4 batteries	=	692	men.
1 <i>Abtheilung</i> of 3 columns	=	539	" of whom 245 train soldiers.
Total	=	1,231	"

so that all needs could be easily met.

The total number of units to be formed will therefore be—

18 *Abtheilungen* of field batteries = 72 batteries.

18 *Abtheilungen* of columns = 18 artillery and 36 infantry ammunition columns.

The establishments will be the same as for regular formations, and the *Abtheilungen* will be designated, "Landwehr Field *Abtheilung* of the Army Corps," or "Column *Abtheilung* of the Landwehr Division."

D. FOOT ARTILLERY.

According to most authorities, on mobilisation a battalion of Landwehr Foot Artillery is formed corresponding to each battalion of that arm in the active army. For some years still, however, the battalions of the 11th Foot Artillery will be unable to do more than mobilise themselves with their own men. According to the table on page 59, at present—

4 Battalions dispose of	2,166 + 812	=	2,968	trained men.
4 " " "	1,940 + 731	=	2,671	"
21 " " "	1,725 + 649	=	2,374	"
2 " " "	940			

and the total number of trained foot artillerymen of all classes is 77,558. The strength of a non-mobilised battalion of Landwehr Foot Artillery is:—

18 Officers.
2 Medical Officers.
1 Paymaster.

1 Armourer.	}	617 N.-C. officers and men.
73 N.-C. officers,		
12 Buglers,		
516 Lance-corporals and privates,		
12 Workmen,		
4 Hospital assistants,		
7 Officers' horses.		

It is evident, therefore, that at present every active battalion, except those of the 11th Regiment, will be able to mobilise itself, and form a corresponding mobilised Landwehr Battalion of the same strength as itself, and half a non-mobilised Landwehr Battalion of the above strength, which would be available for garrison duty, or as a *dépôt* for the mobilised formations. Excluding Ersatz Reserve, the total number of trained foot Artillerymen is at present (page 59) 77,558, and the formations given above would absorb:—

14 mobilised regular regiments	at 2,202 men	= 30,828
3 " " battalions	at 1,095 "	= 3,285
13 " " Landwehr regiments	at 2,202 "	= 28,626
3 " " " battalions	at 1,095 "	= 3,285
14½ non-mobilised Landwehr battalions	at 617 "	= 8,947

Total, 74½ battalions = 74,971

which would leave a margin of 2,587 men. When the organisation of the Army is fully developed, 82,803 men, besides Ersatz Reserve, will be available, and 2 mobilised and 1 non-mobilised Landwehr battalions can also be formed for the 11th Regiment.

E. FIELD PIONEERS.

It has been stated in Chapter XII that 628 men would be available from each Pioneer Battalion after the formation of the field units for the active troops and the siege pioneer companies had been completed. Out of those a field company and bridge train would be formed for each Reserve Division, and it is evident that the resources for the eventual formation of a second field company for the corresponding Landwehr Division would be ample. The 18 Divisions would require 18 such companies, but it is improbable that bridge trains would be attached to them. Two extra 4-horsed tool wagons, each with 200 shovels, 50 pickaxes, 30 axes, &c., would be attached to each company.

F. SIEGE OR FORTRESS PIONEERS.

As already mentioned in Chapter X, on mobilisation, the 4th Company of each Prussian, Saxon, or Württemberg (except the 16th) Pioneer Battalion, and the 4th and 5th Companies of each Bavarian Pioneer Battalion form two siege companies, the 16th Prussian Battalion forming six such companies. The total is therefore 42 siege companies of pioneers. When employed as fortress pioneer companies, those companies have a strength of—

4 Officers,
1 Medical officer,
201 N.-C. officers and men.
1 Officer's horse.

In the event of war being carried on exclusively beyond the frontier, all those companies could be mobilised, and they would then receive the establishment shown in Chapter X, and be grouped into battalions as therein stated.

In addition to the above, each pioneer battalion (except the 16th) has at least 649 men (see page 60) belonging to the 2nd Ban of the Landwehr, and from those 3 companies per battalion, or 54 in all, of Landwehr Fortress Pioneers could be formed.

G. TRAIN.

When the 18 Landwehr Divisions are mobilised, there will be required for each 2 provision columns, 1 bearer company, and 3 field hospitals. According to the tables on page 60, there are 15,986 train soldiers in the 2nd Ban of the Landwehr, so that the resources are ample to meet the 10,944 men shown as required in Appendix IV, from which 4,068, for medical *personnel*, stretcher bearers supplied from the furloughed lists of the infantry, should be deducted, and to which 612 train soldiers employed in the staffs of the Landwehr Divisions should be added. Thus the train of the 2nd Ban of the Landwehr will be able to stand the dipping into spoken of at page 148 to a certain extent.

CHAPTER XV.

SPECIAL CORPS AND DEPARTMENTS OF THE ARMY.

THE MOUNTED "FELD-JÄGER" (COURIER) CORPS.

THIS corps is composed of officers who desire to obtain the higher posts in the Forest Department, and its object is to provide a suitable body of men for the conveyance of despatches, and for courier duties in peace and war. The conditions of admission are that each candidate must be born in Germany, be between 19 and 23 years of age, in perfect health, and of irreproachable conduct, must have passed the final examination at a 1st class *Real* or equivalent school, and have fulfilled his period of service in a rifle battalion. He must also show that he is in possession of a yearly income of 60*l*.

The corps consists of 3 "Ober-jäger" (1st lieutenants) and 81 "Feld-jäger" (2nd lieutenants). In time of peace only the 3 Ober-jäger and 12 Feld-jäger are mounted and on military duty at Berlin, and 20 more are under instruction in the Forest

Academy. The remainder are at the disposal of the Foreign Office or are attached to regiments. Three times during their period of service the *Feld-jäger* may be attached for duty to their battalions, the first two times for 40, the last time for 56 days, generally in the period from the 15th March to the close of the autumn manœuvres. Six of them are attached every year to rifle battalions for six months, in vacant officers' places, to give instruction in forest duties.

An Imperial Aide-de-Camp is chief of the corps, and it is placed under the Inspector of Rifles and Sharpshooters.

THE BODY GUARD GENDARMERIE.

This corps consists of an officer and 24 men detached from various Prussian cavalry regiments, but still retained on their establishment, for duty near the person of the Emperor. They wear a special uniform (see Chapter XVI), and take their orders from one of the Emperor's Aides-de-Camp.

THE PRUSSIAN PALACE GUARD COMPANY.

The strength of this company is 70 non-commissioned officers, mostly demi-invalids of at least twelve years' service, chosen for their distinguished services from the whole Prussian Army. It is commanded by an Imperial Aide-de-Camp, assisted by a captain of Invalids, and by two 1st lieutenants and six 2nd lieutenants detailed from infantry regiments. The duties of the Palace Guard Company are to keep watch over the Royal Palaces and gardens in Berlin, Potsdam, and Charlottenburg, and to mount guard inside the palaces on state occasions.

THE HESSIAN GUARD UNDER-OFFICERS COMPANY.

The duties of this company are similar to the above. It is stationed at Darmstadt, and composed of 47 non-commissioned officers, commanded by an Aide-de-Camp of the Grand Duke.

THE BAVARIAN ARCHERS OF THE GUARD (LEIBGARDE DER HARTSCHIERE).

This corps is stationed at Munich, where it performs guard duties in the Royal Palaces. It is composed of a captain-general (a general of the infantry), a 1st lieutenant, a 2nd lieutenant, a cornet, an exon, an adjutant, 4 1st brigadiers, 4 2nd brigadiers (all officers), a surgeon, a quartermaster-sergeant, a hospital assistant, and 100 archers.

THE WÜRTTEMBERG PALACE GUARD COMPANY.

This company is composed of 30 non-commissioned officers, commanded by a 1st lieutenant detached from his regiment. Its duties are similar to those of a Prussian company, and it is stationed at Stuttgart.

THE DEMI-INVALIDS.

The demi-invalids are non-commissioned officers capable

only of garrison duty, who receive a pension and a recommendation for civil employment, or are provided with quarters, rations, &c., by one of the Army Corps, and are employed as clerks, superintendents of stores, &c., receiving the same pay as those of their rank of the active army. The total number of such in the budget is 340. In Bavaria the demi-invalids are organised into two divisions, the first at Nymphenburg, the second at Königshofen, administered by Landwehr Districts detailed for the purpose. The men need not live at division headquarters.

INVALIDS (PENSIONERS).

Invalids are pensioned non-commissioned officers or men who are no longer able to perform garrison duty. They may be either out-pensioners or be maintained in the Invalid Establishments, which are as follows:—

Berlin Invalid House.—The invalids are organised in a battalion of 8 companies commanded by 8 lieutenant-colonels or majors, with 16 captains or lieutenants as company officers, and an adjutant, 27 officers in all. A general is Governor, and a lieutenant-general Commandant of the institution, to which are attached 3 medical officers and 4 officials. The total number of invalids is 311.

Carlshafen Invalid House (for Hesse).—This is a branch of the Berlin house, and has a staff of 1 officer as commandant.

Stolp Invalid House.—This house holds 4 officers and 70 men.

The Guard Invalid Company at Potsdam and 6 provincial invalid companies were broken up on the 1st January, 1888, and their officers and men either placed on out-pensions or transferred to one of the above invalid houses.

The Mecklenburg Invalid Division at Schwerin has one officer, and receives invalids from the Mecklenburg troops.

Württemberg Honourable Corps of Invalids.—At Comburg; staff, 10 officers.

Bavarian Invalid House.—At Benediktbeuern; staff, 2 officers, 2 officials.

All the officers of these establishments are pensioned, mostly on account of wounds or ill-health contracted on duty. The total number of invalids maintained in them is about 750, but there are also a large number of out-pensioners receiving the same pay and allowances as those accommodated in the invalid houses.

GENDARMERIE.

The territorial gendarmerie (*Land-Gendarmerie* in Prussia, &c., *Landjäger Corps* in Württemberg, *Gendarmerie-Corps* in Bavaria), though not actually belonging to the Army is so closely connected with it, and furnishes such assistance to it in war, that it is necessary to include it here. Its duties in peace are to aid the authorities in maintaining public order and security, for which purpose it is composed exclusively of selected

soldiers of at least nine years' service, of irreproachable conduct and vigorous physique, and who can read, write, and cypher. The above conditions are those for admission to the Prussian Gendarmerie; those for the other states are similar, except that the minimum service in Bavaria and Württemberg is three years only.

The officers are transferred direct from the Army, and are such as desire a quieter life than that of an active officer, and have a right to pension.

The force belongs financially, in Prussia, to the Ministry of the Interior, and in other states to the corresponding Government office.

Prussia.—The head of the Gendarmerie is a general officer who has a staff of two adjutants (majors), a paymaster and five clerks (officials). The force is divided into 11 brigades, one for the territory of each of the 11 Prussian Army Corps, each with a staff of a brigadier (colonel or lieutenant-colonel), 3 to 7 officers (46 in all), according to the number of districts into which the brigade is divided (majors, captains, or 1st lieutenants), and two clerks (officials). Each brigade bears the number of the corresponding Army Corps, and has its headquarters at the same place, except in the case of the 9th, which has its headquarters at Kiel. The number of gendarmes varies in each brigade and district, the total for the kingdom being 188 head-gendarmes, 1,681 mounted gendarmes, and 2,084 foot gendarmes.

Bavaria.—The Bavarian Gendarmerie consists of about 2,600 men. Its headquarters are at Munich, and the staff consists of a general officer as chief, a lieutenant as adjutant, a captain in charge of the Gendarmerie Training School, and two officials. The force is divided into nine companies, each with a commandant and one other officer.

Württemberg.—The Landjäger-Corps numbers 4 officers (1 commandant and 3 district commanders), 75 under-officers, and 445 Landjäger.

Saxony.—The Saxon Gendarmerie comprises 1 officer, 4 under-officers, chiefs of circles, and 317 under-officers, corporals, and gendarmes. It is less closely connected with the Army than in any other State.

Baden.—One colonel-commandant with an adjutant, 4 officers (commanding four districts), and 485 gendarmes of all ranks.

Hesse.—One colonel-commandant, 3 officers (commanding districts), and 238 gendarmes of all ranks.

Smaller States.—The gendarmerie of the smaller States number some 800 gendarmes of all ranks.

Alsace-Lorraine.—The Imperial territory forms a special brigade, commanded by a colonel with a captain as adjutant, and a paymaster. There are four districts, each under an officer (3 Prussians and 1 Saxon), and comprising altogether 19 head gendarmes, and 371 mounted and foot gendarmes.

The total for the Empire is therefore some 9,300 gendarmes, of whom about one-third are mounted, with 105 officers.

The field gendarmerie formations will be found in Chapter XXI.

THE ENGINEER DEPARTMENT.

In addition to the Engineer officers attached to the Pioneer battalions, a separate cadre of officers is maintained for fortress and local duties, and as professors and instructors in the engineer schools and members of Engineer Committees.

In Prussia the chief of the Engineer Corps is the Inspector-General of Engineers, Pioneers, and Fortresses, and the officers of the Corps (*Ingenieur-Corps*) are divided into four Inspections, numbered 1 to 4, corresponding to the four Engineer Inspections mentioned in Chapter XVIII, their officers being employed in the fortresses placed under those Inspections. Each of those Inspections forms a corps of officers for purposes of promotion, and each has on its seconded list its own officers employed in the War Ministry, War Schools, Cadet Schools, &c. The total number of officers of the Engineer Inspections, according to the budget for 1887-1888 is 262, but according to the Army List for 1887 only 230 officers are shown, distributed as follows:—

	Maj. Gen.	Colonels.	Lieut.- Colonels.	Majors.	Captains.	1st Lieuts.	2nd Lieuts.
1st Inspection ..	1	1	3	7	18	16	19
2nd " ..	..	2	3	9	13	18	21
3rd " .	..	3	..	7	12	12	13
4th " ..	..	2	3	9	11	19	10
Totals ..	1	7	9	32	54	65	62

In Saxony there is no separate corps of Engineer Officers, as there are no fortresses (except Königstein, which has no Engineer Officer). The only purely engineer appointments outside of the 12th Pioneer Battalion are those in the Engineer Department of the General Staff, which employs five officers.

Württemberg has only one Engineer Officer, a colonel, employed outside the 13th Pioneer Battalion, and he is in the War Ministry.

In Bavaria, in addition to the seven officers employed under the Inspector-General of Engineers and Fortresses, there are two bodies of Engineer Officers, termed "*Fortificationen*," one belonging to the fortress of Ingolstadt, the other to that of Gernersheim. To the former belong 3 field officers, 4 captains, and 8 lieutenants, to the latter 1 field officer, 2 captains, and 3 lieutenants, while 1 field officer, 6 captains, and 3 lieutenants are seconded for other duties. In consequence of the recent (1886) transfer of the Military Works Department from the Engineers to a special body of officials, as in Prussia, there

are a large number of supernumerary Engineer Officers in Bavaria, the total number of officers shown as attached to the "*Fortificationen*" in 1887 being 22, while 11 more are shown as seconded.

Under the officers of the Engineer Department are employed a body of officials recruited at present from non-commissioned officers of pioneers with nine years' service, five as non-commissioned officers, but in future to be selected from pupils of the School of Fortification Construction (see Chapter III, Part II). They number 377 in all as under :—

	Prussia.	Saxony.	Bavaria.	Total.
Secretaries of Fortress Inspections (<i>Festungs-Inspektions-Sekretäre</i>)	11	1	..	12
Assistant do. do.	3	..	..	3
Engineer Secretaries (<i>Ingenieur-Sekretäre</i>) ..	44	..	3	47
Assistant do. do.	21	..	3	24
Engineer Staff-sergeants (<i>Wallmeister</i>) ..	222	1	23	251
Totals	301	2	34	337

ORDNANCE CORPS (*Zeug-Offiziere, &c.*).

The Ordnance Corps, the members of which are employed in the artillery establishments, arsenals, and depôts, and the small-arms factories, is placed under the War Ministries of the various States. In time of war, a portion of its *personnel* is employed with the Siege Parks and Ammunition Depôts. Its officers are recruited from the non-commissioned ranks of the corps, and form a distinct body in each State for promotion, with equal rights to those of other officers of the Army. They attain to no higher rank than captain, but may be made majors by brevet.

The non-commissioned ranks comprise a number of sergeant-majors and sergeants who are recruited from non-commissioned officers of artillery. The total strength of this corps is—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Captains (<i>Zeug-Hauptmann</i>) ..	63	4	2	6	75
1st Lieutenants (<i>Zeug-Premier Lieutenant</i>)	40	3	1	11	55
2nd Lieutenants (<i>Zeug-Lieutenant</i>) ..	87	2	1	11	101
Total officers	190	9	4	28	231
Sergeant-majors (<i>Zeug-Feldwebel</i>) ..	249	12	8	44	313
Sergeants (<i>Zeug-Sergeant</i>) ..	249	12	6	23	295
Armourers (<i>Zeug-Büchsenmacher</i>) ..	46	2	1	6	55
Total N.-C. officers, &c. ..	544	26	15	78	663

CORPS OF ARTIFICERS (*Feuerwerks-Offiziere*).

The corps is under the Inspectors of Artillery, and its officers are employed in the superintendence of the making up of ammunition in regiments and artillery establishments and depôts. Its officers are of similar standing and rank to those of the Ordnance Corps, but the non-commissioned officers (*Ober-Feuerwerker* and *Feuerwerker*) remain on the strength of their regiments, or are seconded from them for extra-regimental employment. The strength of the corps in officers is—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Captains (<i>Feuerwerks-Hauptmann</i>)	20	1	1	2	24
1st Lieutenants (<i>Feuerwerks-Pre-mier-Lieutenant</i>)	23	..	..	5	28
2nd Lieutenants (<i>Feuerwerks-Lieutenant</i>)	53	2	1	6	62
Totals	96	3	2	13	114

MEDICAL DEPARTMENT.

The Medical Department comprises 1,777 medical officers, according to the budget for 1887-8, distributed as follows in the various ranks:—

	Prussia.	Saxony.	Württemberg.	Bavaria.
Surgeons-General of the Army	1	..	..	1
Surgeons-General*	15	1	1	2
Surgeons-Major	255	21	15	205
Surgeons	367	33	22	
Assistant-Surgeons	661	53	36	
Total according to 1886-87 Budget	1,299	108	74	208
Augmentation, all ranks, by 1887-88 Budget	76	10	2	
Totals	1,375	118	76	208

No detailed figures for 1887-8 are available.

As a rule, a Surgeon-Major is in charge of each regiment, and Surgeons or Assistant-Surgeons are in medical charge of battalions, *Abtheilungen*, or detached squadrons. The senior medical officer at the headquarters of each division officiates as Divisional Surgeon in addition to his other duties.

The recruitment and promotion of medical officers is de-

* 18 as Corps Surgeons of the Army Corps, 1 as Chief of the Frederick William Institute.

tailed in Chapter I, Part II, and the organisation of hospitals in Chapter VI, Part II.

In addition to the medical officers proper, there are 21 apothecaries and a hospital administrative *personnel*. The apothecaries are officials with the standing of officers, but without relative rank. Eighteen of them are attached to the 18 Army Corps to control the supply and issue of all medical stores to the hospitals, &c., of their corps, and to inspect the mobilisation stores in the regimental and train depôts. The remaining three are employed in the large Bavarian hospitals at Munich, Würzburg, and Ingolstadt, but these are to be reduced gradually, and their duties handed over, as in Prussia, to the medical officers.

The hospital administrative *personnel* is recruited from non-commissioned officers with at least eight years' service, and comprises the following ranks:—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Chief Hospital Inspectors (<i>Ober-Lazareth-Inspector</i>)	35	2	3	7	47
Inspectors of Hospital Administration (<i>Lazareth-Verwaltungs-Inspector</i>)	28	..	1	3	32
Hospital Inspectors	86	6	5	15	112
Totals	149	8	9	25	191

Their duties are the charge of the various medical stores and other material in the hospitals, and they are responsible to the intendants for their preservation in good order.

The sick attendants (*Krankenwärter*), who number from 400 to 600 in all, assist the regimental hospital assistants in the hospitals, together with a number (424 for Prussia, 17 for Würtemberg in the 1887-88 budget) of hired civilians. The former are recruited from men of the annual contingent to the number of about 24 per year and per Army Corps, and only serve one or two years.

As engineers, &c., 19 subordinate officials are also employed in the hospitals.

ADMINISTRATIVE DEPARTMENTS.

At the head of the Administrative Departments is the Intendance Corps, composed of officials with the standing of officers, but without relative rank, and consisting of—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Army Corps Intendants (<i>Corps-Intendant</i>)	14	1	1	2	18
Intendance Councillors (<i>Intendantur Rath</i>)	69	6	5	16	96
Assistant Intendants (<i>Intendantur-Assessor</i>)	34	3	2	5	44
Totals	117	10	8	23	158

These officials have administrative charge of Army Corps, Districts, or Garrisons, and are assisted by a body of officials attached to the Intendance offices. This *personnel* is recruited from aspirant paymasters and non-commissioned officers with over 12 years' service, and consists of—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Secretaries (<i>Intendantur-Sekretär</i>)	205	17	14	36	272
Assistant Secretaries	102	9	7	19	137
Registrars (<i>Registrator</i>)	28	2	2	2	34
Assistant Registrars	14	1	1	2	18
Clerks (<i>Kanzlist</i>)	21	1	1	4	27
Totals	371	30	25	63	489

Funds are also allowed for the employment of a number of civil subordinates, and each corps intendant is allowed a civilian clerk. The services of the aspirant paymasters going through their course are also utilised in these offices.

The supply of food and forage is managed by a *personnel* composed of—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
Provision Masters (<i>Proviant-Meister</i>)	51	3	3	7	64
Magazine Accountants (<i>Proviant-Amt-Rendant</i>)	76	6	3	7	92
3rd Class Magazine Accountants (<i>Proviant-Amt-Rendant</i>)	148	14	9	20	191
Totals	275	23	15	34	347

Provision Masters are usually placed in charge of Principal Magazines, Magazine Accountants in that of 2nd Class Magazines, and 3rd Class Magazine Accountants in that of 3rd Class

Magazines (see Chapter VI, Part II), but the latter two grades are also employed in subordinate charge of magazines of a higher class, in which case they are termed Provision Office Controllers (*Proviantamt-Kontroleure*) or Provision Office Assistants (*Assistenten*) respectively. There are also 327 subordinate officials as watchmen, mechanics, millers, &c. (251 in Prussia, 18 in Saxony, 17 in Württemberg, and 34 in Bavaria), and a variable number of hired civilian workmen. The men of the bakery sections of the train battalions also work in the magazines.

The Clothing and Equipment Depôts* employ the following number of officials (former non-commissioned officers) and subordinate officials:—

	Prussia.	Saxony.	Württem- berg.	Bavaria.	Total.
Directors	2	2	1	2	7
Accountants	5	1	1	2	9
Controllers	5	1	1	2	9
Assistant Controllers	10	4	1	2	17
Totals	20	8	3	6	37
Subordinates	24	12	4	7	47

In the Garrison Administration Offices, which have charge of barracks, bedding, barrack furniture, &c., are employed the following officials, recruited from old non-commissioned officers:—

	Prussia.	Saxony.	Württem- berg.	Bavaria.	Total.
Directors (<i>Garnisons-Verwal- tungs-Direktor</i>)	27	1	2	3	33
Chief Inspectors (<i>G.-F.-Ober- Inspektor</i>)	23	3	2	4	32
Inspectors (<i>Garnisons-Verwal- tungs-Inspektor</i>)	64	3	4	8	79
Barrack Inspectors (<i>Kasernen- Inspektor</i>)	372	15	20	53	460
Totals	483	22	28	68	604
Subordinate officials (mechanics, &c.	760	47	29	100	936

The Military Works Department, which is also under the Intendence, is managed by a technical *personnel* of 19 Intendence Councillors for military works (one to each Army Corps, except the 12th, and two at the War Ministry) and 80 Inspectors of Military Works, with 991 employes of all ranks. In Saxony the Military Works Department is still in the hands of the Engineers.

* About to be reorganised.

THE JUDGE-ADVOCATE'S DEPARTMENT.

The *personnel* of this department comprises—

	Prussia.	Saxony.	Württemberg.	Bavaria.	Total.
General Officer, Chief of the Department	..	..	..	1	1
Judge-Advocate Gen. (<i>General Auditeur</i>)	1	1	1	1	4
Councillors to ditto	6	1	2	6	15
Office employés	13	3	2	2	21
Army Corps Judge-Advocates (<i>Korps Auditeur</i>)	15	1	1	2	19
Divisional and Garrison Judge-Advocates	95	8	11	33	147
Registrars (<i>Aktuaris</i>)	11	1	..	8	20
Totals	141	15	17	54	227

CHAPLAINS' DEPARTMENT.

The Prussian Protestant Chaplains' Department numbers 1 chaplain-general, 12 1st class chaplains, 57 divisional or garrison chaplains, and 65 sacristans; the Catholic Department 1 chaplain-general, 40 divisional and garrison chaplains, and 36 sacristans. In Saxony are employed 5 Protestant chaplains with 4 sacristans, and 1 Catholic chaplain with 1 sacristan; and in Württemberg 3 garrison chaplains. In Bavaria there is no such department, the parish clergy performing all the necessary duties.

CHAPTER XVI.

CLOTHING, EQUIPMENT, AND SMALL ARMS.

A. NON-COMMISSIONED OFFICERS AND MEN.

I. INFANTRY.

(a.) *Clothing.*

Tunic.—The tunic of the Prussian, Saxon (except 108th Regiment, see below), Württemberg, and Hessian infantry is dark blue and single-breasted, except in the 13th (Württemberg) Army Corps, in which it is double-breasted. It has scarlet piping

down the front and on the skirts in rear, and in the Saxon troops the piping is also carried round the bottom of the skirts. The buttons are of yellow metal, except in the 1st Foot Guards, Guard Fusiliers, 1st and 3rd Battalions 89th Grenadiers, 40th Fusiliers, and 115th, 116th, 117th, and 118th Regiments in which they are of white metal. Those above the skirts are shaped as hooks to support the belt. The collar is scarlet, with two bars of white lace, as a distinction, in the Prussian Guard, 89th (1st and 3rd Battalions), 100th, 101st, 109th, 115th, 119th, and 123rd Regiments, and of yellow lace in the 2nd Battalion, 89th Grenadiers. The cuffs are scarlet and of two patterns, the "Swedish," which is simply a plain band of scarlet cloth round the lower part of the sleeve, as in the British Infantry, and the "Brandenburg" which, in addition to the band, has a rectangular upright patch with three buttons, somewhat similar to that of the British Foot Guards. The "Swedish" cuff is worn by the Prussian Foot Guards, Guard Fusiliers, 109th, 119th, 123rd and all Saxon Infantry Regiments, and in the four Foot Guard Regiments, Guard Fusiliers, 100th, 101st, 109th, 119th, and 123rd Regiments it has two upright bars of white lace with buttons at their upper extremity. The rest of the infantry has the "Brandenburg" cuff. The upright patch of this cuff is also scarlet, except in the four Prussian Guard Grenadier Regiments, in which it is dark blue, and in the 115th, 116th, 117th, and 118th Regiments in which it is of the same colour as the shoulder-strap. This upright patch is surrounded on two sides in some Army Corps by piping as shown in the table below, and is ornamented with three horizontal bars of white lace in the Guard Grenadiers, 1st and 3rd Battalions, 89th Grenadiers, and 115th Regiment, of yellow lace in the 2nd Battalion 89th Grenadiers.

The shoulder-straps and the piping on the patch of the Brandenburg cuff serve to distinguish the Army Corps, and it will be observed that in Prussia the sequence of colours, white, scarlet, yellow, light blue, is observed. Thus for the Prussian Line Infantry the colours of the shoulder-straps and of the piping on the cuff are as follows:—

Army Corps.	Regiments.	Shoulder Strap.	Piping on Cuff.
I.	1, 3, 4, 5, 33, 41, 43, 44, 45	White	White.
II.	2, 9, 14, 21, 34, 42, 49, 54, 61	"	None.
III.	8, 12, 20, 24, 35, 48, 52, 60, 64	Scarlet	White.
IV.	26, 27, 31, 36, 66, 67, 71, 72, 93, 96	"	None.
V.	6, 7, 18, 19, 37, 46, 47, 58, 59	Yellow	White.
VI.	10, 11, 22, 23, 38, 50, 51, 62, 63	"	None.
VII.	13, 15, 16, 17, 39, 53, 55, 56, 57	Light blue	White.
VIII.	25, 28, 29, 30, 40, 65, 68, 69, 70	"	None.
IX.	75, 76, 84, 85, 86	White	Yellow.
X.	73, 74, 77, 78, 79, 91, 92	"	Light blue.
XI.	32, 80, 81, 82, 83, 87, 88, 94, 95	Scarlet	Yellow.
XV. {	97, 98, 99, 128, 129, 130, 131, 132, 135, } 136, 137, 138	"	Light blue.

Thus at a glance the Army Corps to which a regiment belongs can be recognised, but it must be noted that the following régiments are not included in the Army Corps to which they belong, but in those in brackets after their number, viz.:—17th (XIV), 18th (VI), 25th (XIV), 31st (IX), 50th (V), 60th (XV), 67th (XV), 82nd (X), 128th (I), and 129th (II).

Of the Prussian Guard, the 1st Foot Guards and 1st Grenadiers have white, 2nd Foot Guards and 2nd Grenadiers, scarlet, 3rd Foot Guards, 3rd Grenadiers, and Guard Fusiliers, yellow, and 4th Foot Guards and 4th Grenadiers, light blue shoulder-straps.

The 1st and 3rd Battalions 89th, and the 90th Regiment (Mecklenburg - Schwerin) have the white shoulder-straps of their Army Corps (IX); the 2nd Battalion 89th (Mecklenburg-Strelitz) has scarlet shoulder-straps. The upright patch on the cuff of the 89th is dark blue with scarlet piping, that of the 90th is of the IX. Army Corps pattern.

The shoulder-strap of the Saxon Regiments, Nos. 100 to 107, 133, 134, and 139 is dark blue with scarlet piping.

That of the Württemberg Regiments is scarlet (119th to 126th), and the patch on the cuff (when worn) has light blue piping.

The 105th (Saxon) and 126th (Württemberg) Regiments belong in peace to the XV. Army Corps but in war would rejoin their own Corps.

In the XIV. (Baden) Army Corps, the 109th and 110th have white, the 111th scarlet, the 112th yellow, the 113th light blue, and the 114th green shoulder-straps, with no piping on the cuffs.

In the 25th (Grand Ducal Hessian) Division, the shoulder-straps and upright patch on the cuff are scarlet in the 115th, white in the 116th, light blue in the 117th, and yellow in the 118th.

Tunic for 108th (Saxon) Regiment.—Dark green, with scarlet piping and yellow buttons as in the other Saxon regiments.

Black cuffs and collars, latter with red piping round the bottom. Dark green shoulder-straps with red piping.

Tunic for Bavarian Infantry.—Light blue with scarlet piping on the front and skirts. Buttons yellow, except in the Body Guard Regiment, in which they are white. Collar scarlet, ornamented in the Body Guard Regiment with two bars of white lace. Scarlet cuffs of "Swedish" pattern, with two bars of white lace in the Body Guard Regiment, of "Brandenburg" pattern in the line, with white piping in the Regiments (1st, 2nd, 3rd, 4th, 10th, 11th, 12th, 13th, and 16th) of the I. Army Corps, without piping in those of the II. Army Corps. Shoulder-straps scarlet.

On the shoulder-strap is marked the number of the regiment in scarlet on white, yellow, light blue, or green shoulder-straps, in yellow on scarlet or dark blue shoulder-straps. To this rule there are the following exceptions:—The Prussian Foot Guards and Guard Fusiliers have no numbers. The Bavarian Body Guard, 53rd Regiment, and 109th Grenadiers have a crown only. The following regiments have the cypher of their chief, surmounted by a crown, viz.:—1st Guard Grenadiers, A. I., 2nd Guard Grenadiers, F. I., 3rd Guard Grenadiers, E., 4th Guard Grenadiers, A., 1st Grenadiers, F. R. III, 2nd Grenadiers, F. W. R. IV., 7th Grenadiers, W. R., 8th Grenadiers, F. W. R. III, 89th Grenadiers, F. F. III, 91st Regiment, P., 93rd Regiment, L. F., 94th Regiment, C. A., 95th Regiment, E. G., 100th Grenadiers, A. R., 101st Grenadiers, W., 102nd Regiment, L., 104th Regiment, F. A., 106th Regiment G., 107th Regiment, J. G., 110th Grenadiers, W., 115th Regiment, L. IV., 119th Grenadiers, O., 120th Regiment, W., and 123rd Grenadiers, K. The 108th Regiment has a bugle-horn in addition to its number.

On the button which fastens the shoulder-strap is marked the number of the company.

Trousers.—Very dark grey, almost black, cloth with a scarlet piping. Light blue with scarlet piping in the Bavarian Infantry.

Helmet (except in 108th Regiment).—Of black polished leather with two peaks. Metal spike with round base in the Prussian, Saxon, and Württemberg troops, with cross-shaped bars in the Bavarian troops, and bar of metal down the back. The front peak is bound round with metal and the helmet has metal chin-scales in the Prussian Guard, 1st to 12th Grenadiers, and the Bavarian Infantry. The chin-scales are, however, replaced on service by a black leather chin-strap. Other regiments have no metal binding on the front peak and only leather chin-straps. On the front of the helmet the Prussian Guards have the "Guard Eagle" with extended wings with a silver star on its breast, and the Prussian Infantry the "Heraldic Eagle" with the motto "*Mit Gott für König und Vaterland*," the Regiments Nos. 91, 92, 93, 94, 95, and 96 having also the arms of their states on the breast of the eagle in white metal and generally replacing the word "König" by "Fürst." The 92nd wears also a scroll with the word "Peninsula," the 1st one with "1619," the 9th one with

"Colberg, 1807," and the 1st and 2nd Battalions 34th, and 5th and 6th Companies 33rd one with "Für Auszeichnung." The Baden (109th to 114th) Regiments have a winged griffin, the Hessian Regiments (Nos. 115 to 118) a lion and laurel wreath, the Mecklenburg (89th and 90th), a star with the arms of the grand duchy, the Saxon (100th to 107th, 133rd, 134th, and 139th), a star also with the arms of the kingdom, the Württemberg Regiments (119th to 126th) the arms of the kingdom, with a lion and a stag as supporters, and the Bavarian Regiments the lion and shield with the motto "*In Treue Fest.*" All metal ornaments on the helmet are of the same colour as the buttons. In full dress, the Prussian Guard Regiments and the 109th, 110th, and 119th Regiments have white horse-hair plumes (except in the Fusilier Battalions), the Fusilier Battalions of the above regiments and all battalions in the 1st to 12th, 89th, 92nd, 100th, 101st, 115th, and 123rd Regiments, black plumes. In all these regiments the drummers and buglers have scarlet plumes. The cockade of the national colours is worn on the stud fastening the chin-strap. These cockades are of the following colours :—

Prussia, black and white.

Bavaria, white and light blue.

Saxony, Saxe-Coburg-Gotha, and Saxe-Altenburg, green and white.

Württemberg, black and red.

Baden, yellow and red.

Hesse, white and red.

Saxe-Weimar, black, green, and yellow.

Mecklenburg, red, yellow, and blue.

Oldenburg, blue and red.

Brunswick, light blue and yellow.

Lippe-Detmold, red and yellow.

Schaumburg-Lippe, red, blue, and white.

Anhalt, dark green.

Schwarzburg, dark blue and white.

Waldeck and Reuss, black, red, and yellow.

Hanse Towns, white and red.

Alsace-Lorraine and Empire generally, black, white, and red.

Prussian, Mecklenburg, Saxon, Württemberg, and Bavarian troops wear only their own cockade, as do Hessian, Brunswick, Baden, and the 93rd to 96th Regiments, but men of other States serving in these latter or in Prussian Regiments wear their own cockade in addition. The cockade of the contingent is worn on the right, that of the country of the man's origin on the left side.*

Grenadier Cap for the 1st Foot Guards.—This regiment wears on great parades a pointed yellow metal grenadier cap of the form of the time of Frederick the Great, with scarlet back, white and black tuft, and the silver Guard star on the front.

* These remarks apply to the army at large. 2nd class soldiers wear no cockade.

Shaco for the 108th Regiment.—Low shaco of black leather with front peak only, the same emblem in front as in the rest of the Saxon infantry, and a long black horse-hair plume fastened at the left side.

Forage Caps.—Round, and of dark blue cloth with scarlet band and piping round the top; peak only for sergeant-majors and in the Saxon troops, but other ranks, when walking out, may wear caps with peaks. Cockade* of the contingent on the band in front, of the country of origin on the cloth above. The Bavarian forage cap is light blue with scarlet band and piping, that of the 108th Regiment dark green with black band and scarlet piping round the top and band.

Greatcoat.—Of dark grey cloth with patches on the collar of the colour of the collar of the tunic. The shoulder-straps are in the Prussian Guard and the Saxon, Bavarian, and Hessian Regiments the same as those on the tunic, in other regiments they are dark blue with the regimental number or cypher, and with piping the same colour as the shoulder-straps of the tunic.

Boots.—Wellington, of much the same pattern as those issued to British cavalry and artillery, with soles studded with nails. In the field a second pair of canvas lace-up boots with leather mountings is carried. With the Wellington boots, on the march, the trousers are tucked into them.

Gloves.—White leather for under-officers, grey cloth for men.

Stocks.—Of black serge, fastening behind.

(b.) *Equipment.*

Belts.—The new equipment of the German infantry, adopted by Army Order 37 of 3rd March, 1887, consists of a waist belt and braces, to which the remainder of the articles of equipment are attached. The braces are fixed to D's, on each side of the belt-plate, and unite in the centre of the back, whence a single adjustable strap fixed to flat studs on the braces and with a hook on the waist-belt supports the latter. The belts of the Grenadier Battalions of the Prussian Guards and 1st to 12th Grenadier Regiments are of buff leather, pipeclayed, in the rest of the infantry of black leather. On each of the braces, behind the shoulder-blades, are sewn three leather loops to which the knapsack is attached by a pin on whichever pair of loops is most convenient for the man. The bayonet frog is of much the same pattern as in the British service, and is movable.

Cartridge-pouches.—Each man carries two pouches in front, one on each side of the belt-plate and running on it on loops sewn at the top and bottom of the pouch so as to prevent it flapping against his stomach. One loop is placed on each side of the D to which the brace is fixed, thus preventing the pouch from sliding. The top of the pouch opens outwards and down-

* These remarks apply to the army at large. 2nd class soldiers wear no cockade.

wards, and a ring in rear catches on the hook of the brace, thus putting the weight on the latter. Each pouch holds 30 rounds. In rear, suspended by loops on each side of the brace-strap, is a third and larger pouch containing two packets of 20 cartridges each. This pouch opens with a flap like those of the British infantry. It also serves to support the knapsack, and is fastened to it by two small straps. Cartridges are never taken for loading direct from this pouch, but it is regarded as a reserve from which to refill the front pouches. The German infantry soldier therefore carries 100 rounds on his person. Non-commissioned officers have two smaller pouches for 15 rounds each in front.

Knapsack.—The knapsack is made of cowhide with the hair on, open to the rear, with a flap fastening with straps, and stiffened by 18-inch wooden boards. Its breadth is 11·7 inches, depth at top 1·75 inches, at bottom 3·3 inches and its height 12 inches or 13·26 inches. Inside are two canvas flaps to cover the contents. Inside the upper part of the knapsack are four loops to fasten the reserve-ration bag. Three loops at the top of the knapsack support it, a metal pin being passed through those and the loops on the braces. Two steadying straps run from studs on the braces in front to the bottom corners of the knapsack.

In the knapsack are carried:—

Next the back	.. 1 shirt.
	1 pair of linen trousers.
	1 pair of foot cloths.
Against the sides.	.. 1 pair of canvas boots.
	2 tin boxes with grease and cleaning rags.
Next the flaps	.. Pay book.
	Hymn book.
	Clothes brush.
	Boot brush.
	Spare parts for rifle.
	Oil brush.
	Housewife.

If the man marches in canvas boots, the Wellington boots are carried under the flap, feet outwards.

Reserve Ration Bag.—This bag is made of brown waterproof canvas, the same size as the knapsack, with five leather loops at the top through which and the four loops inside the knapsack a metal pin passes, and the bag then lies behind the knapsack and under its flap. If the knapsack is left behind to lighten the man, the reserve ration bag is taken out and fastened by its pin to the braces in the same manner as the knapsack, and hooks are attached to its lower corners to which the steadying straps are fastened. In it are carried the three days' "iron ration" consisting of three tin boxes of preserved meat, a box of preserved vegetables, a bag of salt, one of coffee, and one with biscuit.

Mess-tin.—The mess-tin is of block tin, with handle and cover, of flattened cylindrical form, and is carried strapped on the top of the knapsack, slightly to the rear, to allow of the greatcoat resting on the top of the knapsack. It is marked inside for every half-litre content.

Greatcoat.—The greatcoat is folded up and strapped round the knapsack on all four sides. The forage cap is placed between the greatcoat and the top of the knapsack.

Haversack.—Of brown waterproof canvas, worn on the right side, with a strap of the same material over the left shoulder, but it can also be fastened on to the waist-belt by straps and studs. It is divided into two by a canvas partition inside.

Water-bottle.—The water-bottle is of tin covered with leather, with a small cup fitting over its mouth. It is hooked on to the waist-belt in rear of the haversack.*

Entrenching Tools—A small entrenching tool (spade, pick, or hatchet) is carried by 460 men per battalion, handle down, with the blade in a case suspended by a ring, strap, and stud to the waistbelt in rear of the bayonet frog. The strap closing the case is also passed round the bayonet-scarbboard to steady both.

Sword-knot.—The sword-knot is fixed to the bayonet-frog and by it every company can be identified. The tuft at the end of the knot is in all cases white; above it is a ball, above that a conical piece, and above that again a smaller ball. The conical piece shows the battalion, and is white in the 1st, scarlet in the 2nd, yellow in the 3rd or Fusilier, and light blue in the 4th Battalion. The balls show the company, and follow the same sequence, being white in the 1st, 5th, 7th, and 13th Companies, scarlet in the 2nd, 6th, 8th, and 14th, yellow in the 3rd, 7th, 11th, and 15th, and light blue in the 4th, 8th, 12th and 16th. Bavarian Infantry have throughout white and blue sword-knots.

The great advantage of this new equipment is that the whole can be put together before being put on the man's body, so that troops can turn out quicker in case of a surprise. No straps now cross the breast to impede breathing, the former rolled greatcoat, haversack straps, entrenching tool strap, and water-bottle strap having been abolished. The soldier can also leave his knapsack behind and go into action with his 100 rounds and three days' rations, as could not be done previously, when 40 of the rounds and all the "iron rations" were packed in the knapsack.

Field Dressing Packet.—Every soldier carries in war a small packet containing two antiseptic pads of wadding, a cambric antiseptic bandage, and a safety-pin, wrapped in a piece of waterproof bandaging material, and sewn into the inside of the

* A competition, with prizes of 50*l.* and 25*l.*, has just been thrown open to the public for a new pattern water-bottle.

front of the left skirt of the tunic between the cloth and the lining.*

Mark of Identity.—Each man has a tin ticket with his number and that of his company, squadron, battery, and regiment suspended by a cord round his neck under his clothing.*

Hand Coffee-mills.—Fifty-two of these are carried by the men in each battalion, inside the mess-tin.

The weight carried by a German Infantry soldier in service marching order is 64 lbs. 4·2 oz., divided as below. Where a maximum and minimum weight are given, the figures are from the German Official Regulations, as are also those for the weight of the rifle, bayonet, and cartridges.

WEIGHT CARRIED BY GERMAN INFANTRY SOLDIER.

	Minimum.		Maximum.	
	lbs.	oz.	lbs.	oz.
1 Helmet .. .. .	..	15·3	1	3·4
1 Forage cap .. .. .	..	..	0	4
1 Tunic .. .. .	..	..	3	0
1 Stock .. .. .	..	..	0	3
1 Pair cloth trousers .. .. .	..	..	2	2
1 „ linen trousers .. .. .	..	..	1	0
1 „ drawers .. .. .	..	..	0	10
1 Great coat .. .. .	..	..	4	12
1 Pair gloves .. .. .	..	..	0	7
2 Shirts .. .. .	..	..	2	2
1 Pocket ledger .. .. .	..	..	0	2
1 Hymn book .. .. .	..	..	0	2
2 Pairs foot cloths .. .. .	..	..	0	6
Cleaning and mending articles	No minimum		1	5·1
1 Mark of identity .. .. .	..	..	0	1
1 Pair Wellington boots .. .. .	..	..	2	14
1 Pair canvas lacing boots	2	8·4	2	12
1 Sword knot .. .. .	..	..	0	3
1 Field dressing .. .. .	..	..	0	3
1 Belt and braces	1	8	2	0
2 Front pouches	1	5·7	1	11
1 Rear pouch	0	9·6	0	12·6
1 Knapsack with pin	2	3·2	2	12·8
1 Haversack	0	8·8	0	12·3
1 Mess tin	1	7·5	1	12·1
1 Water-bottle filled (say) .. .. .	..	..	2	0
1 Rifle and sling .. .. .	..	..	10	1
1 Bayonet and scabbard (latter say 7½ oz.) .. .. .	..	..	2	3·6
100 Rounds of ammunition .. .. .	..	..	9	11·2
1 Entrenching tool and case (say) .. .. .	..	..	2	0
Iron rations (say) .. .. .	..	..	2	4
Balance of days' rations (say) .. .. .	..	..	2	0
Total .. .. .	..	..	64	4·2†

* These are common to all arms of the service, and will not be repeated hereafter.

† The British soldier, according to Lord Wolseley (*"Soldier's Pocket Book,"* ed. 1886), carries 55 lbs., with only 12 oz. iron rations, 70 rounds of ammunition, and with no entrenching tool.

(c.) *Arms.*

Rifle.—The arm of the German Infantry is the 1871-84 pattern repeating rifle on Mauser's breech-loading system. The magazine is placed below the barrel and is a permanent part of the rifle. It holds eight cartridges, so that, with one cartridge in the chamber, nine shots can be discharged in succession without reloading. The action of drawing back the bolt extracts the fired cartridge, which flies out to one side, and at the same time causes a block beneath the breech-bolt to fall, somewhat after the manner of the Martini breech-block. This opens the magazine, and a fresh cartridge is forced up on to the top of the block by the spiral spring in the magazine. The action of pushing the bolt forward again raises the block, places the cartridge in position for loading, and finally lodges it in the chamber. Thus, only two motions are required for loading. To fill the magazine, the breech-bolt is drawn back and the magazine thus opened, when the cartridges can be pushed in one by one. When full, the breech-bolt is pushed forward again and the magazine closed, and the repeating arrangement can then be put out of gear by a safety-catch, so that the rifle can be used as a single-loader.

The length of the rifle without the bayonet is 59·05 inches, with it, 70·86 inches. Without the bayonet, with the magazine empty, the rifle weighs 10 lbs. 1 oz., with the magazine full 10 lbs. 13 oz.; with the bayonet, these figures are respectively 11 lbs. 13 oz. and 12 lbs. 9 oz. The barrel is of steel, 31·395 inches long, ·433 inches (11 millimètres) calibre, and rifled with 4 grooves with a twist from left to right of 1 turn in 50 calibres. The length of the rifled portion is 28·62 inches. There are two flap backsights, a small flap, which is used as a standing sight up to 330 yards, and a large flap which is used when lying down as a standing sight up to 220 yards, and, when raised, as a sight from 440 yards (400 mètres) to 1,760 yards (1,600 mètres). It is graduated for every 50 mètres. The muzzle velocity is 1,410 foot-seconds, and the greatest heights of the trajectories for ranges of 500, 1,000, and 1,500 yards respectively are 7 feet, 49 feet, and 160 feet. Under 330 yards, the bullet penetrates 7·8 inches into dry fir wood, at 330 yards 6·24 inches, and at 1,760 yards 2·73 inches. At 660 yards it penetrates an iron plate ·117 inch thick and indents a plate ·273 inch thick. At 880 yards it penetrates 9·36 inches into newly thrown-up sand. With an angle of elevation of 35°, the extreme range of the rifle is 3,300 yards.

The cartridge is of copper, central fire. The powder charge is 77 grains, and the weight of the bullet, which is slightly flattened at the head, and is made of compressed lead hardened with tin, is 386 grains. The cartridge complete weighs 648 grains, 10 rounds weighing 15½ oz. Lubrication is effected by means of a beeswax wad with paper disc and a coating of tallow over the bullet. It is stated that a new cartridge,

loaded with $89\frac{1}{2}$ grains of Rothweil compressed powder, and a lead bullet coated with steel and weighing 386 grains, has been adopted, which gives a muzzle velocity of 1,571 foot-seconds.

Rifles are not carried by sergeant-majors, ensigns, vice-sergeant-majors, drummers, buglers, bandsmen, transport drivers, and hospital assistants.

Sword-bayonet.—The 1884 pattern sword-bayonet is a mere dagger with a blade 10·92 inches long, and weighing 1 lb. 12 oz.

Revolvers.—The ranks named above who do not carry rifles are armed with revolvers, which are carried in a case on the waist-belt on the left front. The arm adopted for Prussia, Württemberg, and Bavaria, is a 6-shooter, calibre ·413 inches, weighing 2 lbs. 13·7 oz. The cartridge (central fire) weighs 387 grains, the bullet weighing 261 grains, and the powder charge 23 grains. The Saxon revolver is a 5-barrelled arm on Scharp's system, calibre ·433 inches, weighing 2 lbs. 3 oz. The bullet weighs 236 grains, and the powder charge is 16·94 grains.

(d.) *Entrenching Tools.*

The men carry the following portable small tools per regiment of three battalions:—

1,200 Spades	or 400	} per battalion.
120 Picks	„ 40	
60 Hatchets	„ 20	

On the wagons are carried per regiment of 3 battalions:—

162 Large shovels	or 54	} per battalion,
54 Pickaxes	„ 18	
36 Axes	„ 12	
81 Hatchets	„ 27	

and 1 hatchet for the regimental staff. A four-battalion regiment would have its tools proportionately increased.

II. RIFLES.

(a.) *Clothing.*

Tunic.—For Prussian rifles and sharpshooters, dark green with scarlet piping on the front and skirts, and yellow metal buttons. Scarlet collars for the rifles, black with scarlet piping for the Guard Sharpshooters. The latter and the Guard Rifles have two bars of yellow lace on each side of the collar. Cuffs scarlet “Swedish,” for rifles, with two bars of yellow lace for the Guard Rifles, black “Brandenburg” with scarlet piping and three bars of yellow lace on the upright patch for the Guard Sharpshooters. Scarlet shoulder-straps, with the number of the

battalion in the line. The Saxon Rifles wear the same uniform as the 108th Regiment, but with white metal buttons. The 14th (Mecklenburg) Battalion has dark blue tunics with scarlet piping, white buttons, and light green collars, cuffs (Swedish), and shoulder-straps with the number 14. The Bavarian Rifles are dressed the same as the infantry, with light green collars, cuffs, piping on the tunic, and shoulder-straps.

Trousers.—Very dark grey with scarlet piping except in the Bavarian Rifles, in which they are light blue with light green piping.

Headdress.—Low black leather shaco with front and rear peaks and leather chin strap in the Prussian battalions. The cockade in front on the top, and below it, in front of the shaco, the silver guard star for the Guard Rifles and sharpshooters, the line eagle for the Line Rifles. Black falling horse-hair plume in full dress for the Guard Rifles and Sharpshooters. The Saxon Rifles have the headdress of the 108th Regiment, the 14th Battalion a shaco with a yellow metal star in front, and a black plume in full dress, and the Bavarian Rifles the Bavarian infantry helmet.

Forage Caps.—As in the infantry, but dark green with a scarlet band in the Prussian Rifles, dark green with a black band and red piping in the Guard Sharpshooters and Saxon Rifles, dark blue with light green band and red piping in the 14th Battalion, and light blue with light green band and piping in the Bavarian Rifles.

Greatcoat.—As in the infantry, shoulder-straps scarlet in the Guards, dark green with red piping in the Prussian Line and Saxon Rifles, dark blue with light green piping in the 14th Battalion, and light blue with light green piping in the Bavarian Rifles.

Boots, Gloves, Stocks.—As in the infantry.

(b.) *Equipment.*

As in the infantry, but the sword-knot is dark green in all except the Bavarian Rifles, in which it is white and blue.

(c.) *Arms.*

As in the infantry, but the standing sight is used up to 297 yards, and the small flap backsight up to 385 yards.

(d.) *Entrenching Tools.*

Portable entrenching tools as in the infantry. In the wagons are carried per battalion 58 large shovels, 18 pickaxes, 12 axes, 26 hatchets.

III. CAVALRY.

IIIA. CUIRASSIERS.

(a.) *Clothing.*

Tunic.—Of white cloth fastening with hooks and eyes, and with three stripes of cloth down the front of the colour of the regimental facings. The collars and cuffs (Swedish) are of the colour of the regimental facings with white lace round them. Shoulder-straps white, with piping of the colour of the regimental facings, without numbers. The 1st and 6th Regiments have the cypher of their honorary Colonels, and the 2nd Regiment L, the cypher of the late Queen Louise. The colours of the facings and buttons are:—

Gardes du Corps.....	Facings scarlet,	buttons white
Guard Cuirassiers.....	light blue,	"
1st "	black,	" yellow
2nd "	crimson,	" white
3rd "	light-blue,	" "
4th "	scarlet,	" "
5th "	light-red,	" yellow
6th "	dark blue,	" "
7th "	yellow,	" white
8th "	light green,	" yellow

The *Gardes du Corps* and *Guard Cuirassiers* have a bar of white lace on each side of the collar, and two such bars on each cuff. These regiments have also blue undress tunics with scarlet piping, with collars, cuffs, and shoulder-straps as on the tunic.

Overalls.—Of dark grey cloth with scarlet piping, except in the 2nd, 5th, and 7th, where they are of the colour of the facings. Linen trousers for stable duties.

Pantaloon.—Of white kersey.

Helmet.—Of yellow metal in the two *Guard* and 6th Regiments, of white metal in the others, coming very low down behind and curved backwards to cover the nape of the neck, with a square front peak and scale chin-chain. Eagle in front in the *Line* and the *Guard Star* in the *Guard*. The 2nd Regiment has a scroll also with the inscription "Hohenfriedberg, 4th June, 1745." Spike for all regiments. In full dress the two *Guard Regiments* replace this spike with an eagle of white metal.

Forage Cap.—White cloth with band and piping of the regimental colour.

*Cuirass.**—Back and breastplate of iron, covered with a layer of copper in the two *Guard Regiments*, and also for non-commissioned officers of the 2nd and 6th Regiments, and united by brass shoulder-scales and side-straps. The *Gardes-du-Corps Regiment* has also black iron cuirasses, and wears for duties at Court scarlet cloth imitation cuirasses with a *Guard Star* in silver on the breast and back; with them, tight white leather

* The cuirass is no longer to be worn in the field.

breeches and jack-boots as in the British Life Guards are worn. Trumpeters wear no cuirass, and in the Guard, instead of the eagle, wear in full dress scarlet plumes.

Gauntlets.—Of white leather.

Greatcoats.—Of dark grey cloth cut looser than in the infantry, with patches on the collar of the regimental colour, (except in the 6th, in which they are scarlet), and white shoulder-straps with, in the 1st and 6th Regiments, the cypher of the honorary Colonel.

Boots.—For mounted duties, long boots reaching half way up the thigh and soft in the leg, with jack-spurs; for dismounted duties, Wellington boots with heel spurs.

Stocks.—As in the infantry.

(b.) *Equipment*.

Belts.—Sword belt of white leather, with slings, worn over the tunic. Pouch belt of white leather, with black leather pouch containing 18 revolver cartridges. Regimental badge on the flap of the pouch.

Sword Knot.—Red leather with white tuft and coloured ball above it, white for the 1st, scarlet for the 2nd, yellow for the 3rd, light blue for the 4th, and green for the 5th squadron. In the *Gardes du Corps* each troop has a different sword knot.

Shabraques.—The shabraques are square, and are worn under the saddle. They are of the colour of the facings (scarlet in the 6th Regiment), and have two stripes of yellow or white braid all round, according to the colour of the regimental buttons. In the *Gardes du Corps* the space between them is dark blue, in the Guard Cuirassiers, scarlet, and those regiments have the Guard star in the rear corners. The wallets are covered with flaps of a similar pattern.

Saddlery and Kits.—See end of this section.

(c.) *Arms*.

Swords (Pallasch).—Straight, with blade 37·12 inches long, and 3-bar guard. Two grooves on each side of the blade. Steel scabbard. Weight of sword, 3 lbs., of sword and scabbard, 4½ lbs.

Carbines.^{*}—Twenty-five men per squadron are armed with the cavalry carbine, pattern 1871, a breechloading arm of much the same pattern as the infantry rifle, pattern 1871 (see page 206), but with the knob of the breech-bolt bent over, so as not to impede the man. It is 39·37 inches long, has a calibre of ·433 inches, weighs 7 lbs. 14 oz., takes the infantry cartridge, and is sighted up to 1,430 yards (1,300 mètres).

Revolver.^{*}—All ranks carry a revolver of the same pattern as in the infantry.

^{*} According to a recent order (12/5/88) the whole of the men are to be armed with carbines in place of revolvers.

IIIB. DRAGOONS.

(a.) *Clothing.*

Tunic.—The tunic of the Dragoons is of the same cut as that of the infantry, with Swedish cuffs, and has piping in front and on the skirts of the regimental colours. In the 25th and 26th (Württemberg) Regiments it is double-breasted. The colour is light blue, except in the 23rd and 24th Regiments, in which it is dark green. The shoulder-straps have no numbers, but the 17th Regiment has F.F. IV, the 19th, A and a crown, the 20th, a crown, the 23rd, L and a crown, and the 25th, O, on the shoulder-straps. The following table shows the distinctive colours of the various regiments:—

		Collar, Shoulder-strap, Cuffs, Cap-band, Patch on Greatcoat Collar, Border of the Shabraque.	Buttons.	Shoulder-straps on the Great-coat.
1st Guard Dragoons		Scarlet (two bars of yellow lace on collar and cuffs)	Yellow	Scarlet.
2nd Guard Dragoons		Scarlet (two bars of white lace on collar and cuffs)	White	"
1st Dragoons	..	Scarlet	Yellow	Light blue with piping of regtl. colour.
2nd	"	Black	"	"
3rd	"	Rose	White	"
4th	"	Sulphur-yellow	"	"
5th	"	Scarlet	"	"
6th	"	Black	"	"
7th	"	Rose	Yellow	"
8th	"	Citron-yellow	"	"
9th	"	White	"	"
10th	"	"	White	"
11th	"	Crimson	Yellow	"
12th	"	"	White	"
13th	"	Scarlet, white piping	Yellow	"
14th	"	Black	"	"
15th	"	Rose	White	"
16th	"	Citron-yellow, white piping	"	"
17th	"	Scarlet (two bars of yellow lace with red stripes on collar and cuffs)	Yellow	"
18th	"	Scarlet; blue piping on collar, blue cuffs with scarlet piping, two bars of yellow lace with red stripes on collar and cuffs	"	"
19th	"	Black (white shoulder-strap)	White	Black.
20th	"	Scarlet	"	Light blue, red piping.
21st	"	Citron-yellow	"	Light blue, yellow piping.
22nd	"	Black, scarlet piping	"	Light blue, red piping.
23rd	"	Scarlet (two bars of yellow lace on collars and cuffs)	"	Scarlet.
24th	"	White	"	White.
25th	"	"	Yellow	Light blue, white piping.
26th	"	Golden yellow	White	Light blue, yellow piping.

Overalls.—Dark grey cloth with scarlet piping, except when the facings are crimson, yellow, or rose colour, when they are of the colour of the facings. White linen for stable duties.

Pantaloon.—Dark blue, with leather strapping. No piping.

Helmet.—As for infantry of the Guards and Line respectively, and according to the contingent, but with metal binding round the front peak, which is cut square, and chin-scales of metal. The eagle of the Prussian Dragoons is slightly different from that of the infantry. The two Guard Dragoon, 17th, 18th, 20th, 21st, 22nd, and 25th Regiments have, in full dress, white, the others black horsehair plumes; trumpeters, scarlet plumes.

Forage Cap.—Light-blue (dark-green in the 23rd and 24th Regiments) with band and piping of the colour of the facings.

Greatcoat.—Dark grey, as in the Cuirassiers, with patches on the collar and shoulder-straps, as above.

Boots.—For mounted duties, knee-boots, for dismounted, Wellington boots, both with heel-spurs.

Gloves, Stocks.—As in the infantry.

(b.) *Equipment.*

Belts.—Sword belt with slings, worn over the tunic, of buff pipeclayed leather, except in the 23rd and 24th Regiments, in which they are black. Pouch belt of white or black leather, with black leather pouch for 20 rounds, with badge on the flap. The 17th and 18th Regiments wear a second pouch on the waist belt.

Sword Knot.—As in the Cuirassiers, except that the tuft is of the same colour as the ball.

Shabraques.—The shabraques cover the saddle and kit entirely, and are rounded at the front and rear, with borders of the colour of the facings. Those of the 23rd and 24th are dark green, those of the others (except 17th and 18th) light blue. The 23rd and 24th have white crowns in the rear corners. The 17th have shabraques of black, and the 18th of white sheep-skin.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

Sword.—The light cavalry sword, 1852 pattern, with 3-bar guard; total length, 40·05 inches. Blade slightly curved, steel scabbard. Weight, 2½ lbs.; weight with scabbard, 3½ lbs.*

Carbine.—All men (except non-commissioned officers, trumpeters, and pioneers) are armed with the cavalry carbine, pattern 1871. (See Cuirassiers.)

Revolvers.—Carried by non-commissioned officers, trumpeters, and pioneers, general pattern.

* A new sword, lighter and straighter than the above, is now being tried experimentally.

IIIc. HUSSARS.

(a.) *Clothing.*

Tunic.—Cut shorter than that in use in the British Hussars, but otherwise of much the same pattern, with five rows of lace on the breast. Collar and cuffs of the same colour as the tunic, with yellow lace on both (besides the trimming) in the Guard Hussars. The olivettes on the lace are of metal in the Guard, 3rd, 6th, 8th, 10th, 12th, 15th, 16th, and 17th Regiments, of wood covered with lace in the others. The following table shows the distinctive colours of the various regiments:—

	Tunic, Forage Cap, Shoulder- straps on Greatcoat, Shabraque.	Cap-band.	Lace, Buttons, Piping on Forage Cap and on Sha- braque.	Busby Bag.	Patches on Collar of Greatcoat, Border of Shabraque.
Guard Hussars.	Scarlet (dark blue shab- raque)	Dark blue .	Yellow ..	Scarlet ..	Scarlet.
1st Hussars ..	Black ..	Scarlet ..	White ..	" ..	" ..
2nd " ..	" ..	Black ..	" ..	White ..	Black.
3rd " ..	Scarlet (dark blue shab- raque and shoulder- strap on greatcoat)	Dark blue .	" ..	Scarlet ..	Scarlet.
4th " ..	Brown ..	Brown ..	Yellow ..	Yellow ..	Yellow.
5th " ..	Crimson ..	Black ..	White ..	Crimson ..	Crimson (black border on shabraque). Scarlet.
6th " ..	Green ..	Scarlet ..	Yellow ..	Scarlet ..	Scarlet.
7th " ..	Dark blue ..	" ..	" ..	" ..	" ..
8th " ..	" ..	Light blue .	White ..	Light blue	Light blue.
9th " ..	Light blue ..	" ..	Yellow ..	" ..	" ..
10th " ..	Green ..	Purple ..	" ..	Purple ..	Purple.
11th " ..	" ..	Scarlet ..	White ..	Scarlet ..	Scarlet.
12th " ..	Light blue ..	Light blue .	" ..	White ..	Light blue.
13th " ..	" ..	Scarlet ..	" ..	Scarlet ..	Scarlet.
14th " ..	Dark blue ..	" ..	" ..	" ..	" ..
15th " ..	" ..	Yellow ..	" ..	Yellow ..	Yellow
16th " ..	Light blue ..	" ..	" ..	" ..	" ..
17th " ..	Black (scar- let shoulder- straps on greatcoat)	Scarlet ..	Yellow ..	Scarlet ..	Scarlet (bor- der of shab- raque yellow).
18th " ..	Light blue (light blue shoulder- straps with yellow pip- ing and number on greatcoat)	Light blue .	" ..	" ..	Scarlet.
19th " ..	Light blue (Light blue shoulder- straps with white pip- ing and number on greatcoat)	" ..	White ..	Dark red ..	Dark red.

Pelisse.—Only worn in the Guard, 3rd, and 15th Regiments. It is dark blue, with lace the same colour as on the tunic, with black fur trimming in the Guard, white in the 3rd, and black in the 15th Regiment. It is lined with white fur in the Guard, and is worn over the left shoulder, suspended by a piece of lace round the neck.

Girdles.—Of black and white wool in the Prussian regiments,

blue and white in the 17th, and white and green in the 18th and 19th Regiments.

Pantaloon.—Dark blue cloth with a narrow stripe of the colour of the lace, except in the 18th and 19th Regiments, which have light blue breeches with a similar stripe. Hussars have no overalls issued to them.

Headress.—Low busby of sealskin, with cockade of national colours in front on the top. Busby bag as above. In front, in the Guard Hussars, the Guard star in yellow metal, in the 1st, 2nd, and 17th Regiments, the Death's Head and crossbones in white metal, W.R. and a crown in the 7th Regiment, and in the 18th and 19th Regiments a star. The 1st to 16th Regiments have a scroll, with "*Mitt Got für König und Vaterland*," and the 17th a similar scroll, with "*Peninsula, Silicien, Waterloo, Mars-la-Tour*" on it. Scale chin-chains. In full dress white plumes, hanging in all except the 18th and 19th Regiments, in which they are upright, and white lines.

Forage Cap.—Colours as above. Piping of the colour of the lace round the band and top.

Greatcoat.—Dark grey, with patches on the collar and shoulder-straps as above.

Boots.—Hessian, with bosses and lace round the top, of the colour of the lace on the tunic. Steel spurs.

Gloves. } As in the Dragoons.
Stocks. }

(b.) *Equipment.*

Belts.—Pouch belt and pouches as in the Dragoons (black in the 17th Regiment). Waist-belt (worn under the tunic) of black leather (white in the 18th and 19th Regiments) with three sabretasche slings.

Sabretasche.—Covered with scarlet cloth with yellow lace, and F.W.R. in the Guard Hussars, W in the 17th Hussars; of plain black leather, with F.W.R., in the 1st to 16th Hussars; and covered with light blue cloth with A and a crown, and with lace of the colour of that on the tunic in the 18th and 19th.

Shabraque.—Worn over the saddle and kit; colours as above. The rear ends are cut away to long points, and the border is cut in zigzags, pointing towards the saddle, with piping the colour of the lace. Black sheepskin in the 18th and 19th Hussars.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

The same as in the Dragoons.

III. LANCERS.

(a.) *Clothing.*

Tunic.—Dark blue for Prussian and Württemberg, dark green for Bavarian, and light blue for Saxon (17th and 18th) Lancers, double-breasted, with piping of the colour of the facings. "Polish" (pointed) cuffs, with a button near the point. Turn-back on the breast. Cut and piping as in the British Lancers. Metal epaulettes, without fringes, of the colour of the buttons, with under surface and ground of cloth; the 17th and 18th have epaulettes of metal scales. The following table shows the distinctive colours of the regiments:—

	Collars, Cuffs, turnback, under surface of the Epaulettes, Patches on the Greatcoat Collar, Cap-band and Piping, border of the Shabraque.	Ground of the Epaulettes.	Buttons.	Shoulder-strap on Greatcoat.
1st Guard Lancers..	Scarlet (white turnbacks with scarlet piping, 2 bars of yellow lace on collar, 1 bar on cuff).	White.	White.	White.
2nd " " "	Scarlet (2 bars of yellow lace on collar, 1 bar on cuff).	Scarlet	Yellow.	Scarlet.
3rd " " "	Yellow (2 bars of white lace on collar, 1 bar on cuff).	Yellow.	White.	Yellow.
1st Lancers ..	Scarlet.	White.	Yellow.	Dark blue, piping colour of ground of epaulettes.
2nd Lancers ..	"	Scarlet.	"	"
3rd " "	"	Yellow.	"	"
4th " "	"	Light blue.	"	"
5th " "	"	White.	White.	"
6th " "	"	Scarlet.	"	"
7th " "	"	Yellow.	"	"
8th " "	"	Light blue.	"	"
9th " "	White.	White.	Yellow.	"
10th " "	Crimson.	Crimson.	"	"
11th " "	Yellow.	Yellow.	"	"
12th " "	Light blue.	Light blue.	"	"
13th " "	White.	White.	White.	"
14th " "	Crimson.	Crimson.	"	"
15th " "	Yellow.	Yellow.	"	"
16th " "	Light blue.	Light blue.	"	"
17th " "	Dark red, white piping, capband light blue, 2 bars of white lace on collar, 1 on cuff. Under surface of epaulette light blue.	..	Yellow.	Light blue, white piping with number.
18th " "	Dark red, white piping, 2 bars of yellow lace on collar, 1 on cuff. Under surface of epaulette light blue.	..	"	"
19th " "	Scarlet.	Scarlet.	White.	Dark blue, scarlet piping.
20th " "	Yellow.	Yellow.	"	Dark blue, yellow piping.
1st Bavarian Lancers	Crimson.	Crimson.	Yellow.	Crimson.
2nd " "	"	"	White.	Dark green, crimson piping.

On the epaulettes and shoulder-straps, the 1st, 3rd, and 19th Regiments wear the cypher of their chiefs. The turnbacks are not worn in marching order.

Girdles.—The Prussian, Württemberg, and Saxon Lancers wear a dark blue cloth girdle, with two stripes of the colour of the turnbacks.

Overalls.—As in the Dragoons; but light blue with white piping in the 17th and 18th Regiments; in the 1st and 2nd Bavarian Regiments, dark green with crimson piping.

Pantaloon.—As in the Dragoons; but light blue, with broad dark red stripes in the 17th and 18th Regiments, and dark green without piping in the 1st and 2nd Bavarian Regiments.

Lance Cap.—Of black polished leather, shaped as in the British Lancers, with scale chin-chain; emblem in front, according to the contingent, and metal binding on the peak. The cockade of the national colours is worn on the left front of the upper part. In full dress, the upper part is covered with a cloth cover of the colour of the ground of the epaulettes (white in the 17th, dark red in the 18th), with white binding, and a white plume and white lines are worn.

Forage Cap.—Dark blue in the Prussian and Württemberg, white in the Saxon, and dark green in the Bavarian Lancers, with band and piping as above.

Greatcoat.

Boots.

Gloves.

Stock.

} As in the Dragoons.

(b.) *Equipment.*

Belts.—As in the Dragoons; the sword-belt worn under the tunic, except in the Bavarian Regiments. In the latter they are black; in others white.

Sword Knot.—As in the Dragoons.

Shabraque.—As in the Dragoons, but dark blue, except in the Bavarian and Saxon Regiments. In the former they are dark green, with crimson borders, rounded in front and peaked in rear, with crowns in the rear angles. In the Saxon Regiments the shabraque is of black sheepskin.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

Lance.—The lance is 10 feet long, $4\frac{1}{2}$ lbs. in weight, and made of 1-inch fir or oak. The four-edged point is 6 inches long, of forged steel, and the butt is also tipped with steel; the shaft is painted black. The lance flags are black and white in Prussian Regiments, green and white in Saxon, black and red in Württemberg, and light blue and white in Bavarian Regiments.

Sword.—The men of the Lancers have a sword with a single guard, more curved than that of the Dragoons. Its total length is 39.76 inches, and its weight is 2 lbs. 1.9 oz. without the scabbard, which is of steel. Non-commissioned officers and trumpeters, who do not carry lances, have the Dragoon sword.

The Bavarian Lancers have the sword adopted for the Field Artillery.

Carbine.—As for Dragoons.

Revolver.—As for Dragoons. The Saxon revolver (see page 180) for Saxon Lancers.

III. SAXON HEAVY CAVALRY.

(a.) *Clothing.*

Tunic.—Light blue, of the same pattern as in the Prussian Cuirassiers, and with similar lace down the front, white with blue stripes for the Guard Cavalry, white with black stripes for the Carabiniers; white (black) piping on the seams of the sleeves and back; white collars and cuffs in the Guard Cavalry, black in the Carabiniers. Yellow scale epaulettes with light blue lining beneath, without fringes, and yellow buttons.

Pantaloon and Overalls.—Light blue, with white piping.

Helmet.—Of yellow metal, as in the Prussian Cuirassiers, with silver star in front, and white plumes (red for trumpeters), instead of the spike, in full dress.

Forage Cap.—Light blue, without peak, with white piping round the top and band. Band white for the Guard Cavalry, black for the Carabiniers.

Greatcoat.—Dark grey, with blue shoulder-straps with white piping, and, for the Guard Cavalry, the royal cypher and crown.

Boots.—Jack boots as in the British Life Guards for mounted duties, with jack spurs; Wellington with heel spurs for dismounted duties.

Gloves.—White leather.

Stocks.—As in the rest of the Army.

(b.) *Equipment.*

Belts.—White leather pouch and waist-belt, the leather worn below the tunic. Black leather pouch.

Sword Knot.—As in the Dragoons.

Shabraque.—Black sheepskin.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

As in the Dragoons, but with Saxon pattern revolvers.

IIIF. BAVARIAN HEAVY CAVALRY.

(a.) *Clothing.*

Tunic.—Light blue, single-breasted, with scarlet collars, cuffs (Swedish), shoulder-straps and piping. Buttons, white in the 1st, yellow in the 2nd Regiment.

Overalls.—Light blue with scarlet piping.

Pantaloons.—Dark blue, without piping.

Helmet.—Bavarian infantry pattern, with metal ornaments the colour of the buttons, and white plumes in full dress.

Forage Cap.—Light blue, with scarlet band and piping.

Greatcoat.—Dark grey, with scarlet shoulder-straps in the 1st, and light blue with scarlet piping in the 2nd Regiment.

Boots.—As in the Prussian Dragoons.

Gloves.—White leather.

Socks.—General pattern.

(b.) *Equipment.*

Belts.—White pouch and sword belts, the latter worn over the tunic. Black leather pouch for 20 rounds.

Sword Knots.—As for Dragoons.

Shabraque.—Light blue, with scarlet trimmings and crown in the rear corners, worn over saddle and kit.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

Sword.—As for Prussian Cuirassiers.

Carbine.
Revolver. } As for Prussian Dragoons.

IIIg. BAVARIAN LIGHT HORSE.

(a.) *Clothing.*

Tunic.—Dark green, cut as for Lancers, with collars, cuffs (Swedish), shoulder-straps (without number), and (in full dress) turnbacks of the colour of the regimental facings. These are :— in the 1st and 2nd Regiments, crimson, 3rd and 6th, peach-red, 4th and 5th, scarlet. Buttons, yellow in the 1st, 3rd, and 5th, white in the 2nd, 4th, and 6th.

Overalls.—Dark green, with piping the colour of the facings.

Pantaloons.—Dark green, without piping.

Helmet.—As in the Bavarian Infantry, with metal ornaments of the colour of the buttons, and (in full dress), in place of the spike, a white horse-hair plume.

Forage Cap.—Dark green, with band and piping the colour of the facings.

Great Coat.—Dark grey, with shoulder-straps of the colour of the facings in the 1st, 3rd, and 5th, dark green, with piping of the colour of the facings, in the 2nd, 4th, and 6th Regiments.

Boots.
Gloves.
Socks. } As in the Prussian Dragoons.

(b.) *Equipment.*

Belts.
Swordknot. } As in the Prussian Dragoons.

Shabraque.—Dark-green cloth, with trimmings and crown of the colour of the facings, worn over the saddle and kit.

Saddlery and Kits.—See end of this section.

(c.) *Arms.*

As in the Prussian Dragoons.

IIIH. SADDLERY AND KITS.*

The following articles form the service marching-order kit of a cavalry soldier:—

<i>Clothing.</i>	<i>Equipment, &c.</i>	<i>Saddlery.</i>
1 Tunic.	1 Pair wallets.	1 Saddle complete.
1 Pelisse (in the Guard Hussars).	1 Waistbelt.	1 Girth.
1 Girdle (lancers and hussars).	1 Sabretasche (hussars).	1 Seat cushion (except for Cuirassiers and Bavarian Cavalry).
1 Linen stable jacket.	1 Sword knot.	3 Baggage straps.
1 Stock.	1 Pouch-belt and pouch.	1 Breastplate.
1 Forage cap.	1 Carbine bucket and strap.	1 Pair stirrup leathers and stirrups.
1 Pair pantaloons.	1 Carbine sling.	1 Bridle-head (with reins and bit).
1 Pair linen trousers.	2 Boxes for cartridges.	1 Snaffle bit, with reins.
2 Pairs drawers.	1 Box with spare parts for carbine.	1 Head collar and strap.
1 Greatcoat.	1 Grease box.	1 Horse blanket.
1 Pair gloves.	(Above for men armed with carbines).	1 Surcingle and large baggage strap.
1 Pair riding boots.	1 Revolver case.	1 Shabraque.
1 Pair Wellington boots.	1 Strap and hook.	1 Nosebag.
1 Pair spare soles.	(For men armed with revolvers).	1 Sailcloth bucket.
2 Shirts.	1 Lance flag.	1 Cornsack.
1 Helmet, busby, or lance-cap.	1 Lance sling.	1 Shoe-case.
1 Cuirass for Cuirassiers.	2 Double buckets.	1 Case of shoeing tools (8 per squadron).
1 Pair epaulettes (lancers and Saxon Heavy Cavalry).	(For men armed with the lance).	1 Forage cord.
1 Pair spurs.	1 Haversack.	2 Fore shoes.
	1 Mess tin and case.	2 Hind shoes.
	1 Bag for rice.	32 Nails.
	1 Bag for salt.	
	1 Bag for coffee.	
	1 Field dressing.	
	1 Mark of identity.	
	1 Coffee mill (8 to 9 per squadron).	
	Cleaning materials.	
	Grooming kit.	

There are three patterns of saddlery in use in the German cavalry: the German for Prussian Cuirassiers, the Danish for Bavarian Cavalry, and the Hungarian for all other regiments. The Hungarian saddle consists of a wooden tree, with wooden arches and bars, a leather seat stretched between the arches, two wallets, plain flaps, girth and stirrup leathers attached to the bars (the latter rather far back according to British ideas), crupper with the strap in V form attached to the bars, and breastplate. On the seat of the saddle is placed a padded

* Two prizes of 300*l.* and 150*l.* have been thrown open to public competition by Army Order 91 of 1887 for the best pattern of new saddlery for the Army.

cushion, with flaps attached, over this again the shabraque, and the whole is bound together by the surcingle, which is not buckled as in the British Service, but terminates in two rings, which are drawn together by a thin rope passed through each three times, and then frapped round itself. The horse-blanket, folded 9 or 12 times, is placed below the saddle.

The method of packing is as follows: on the seat of the saddle is placed the pair of stable trowsers, and over it the padded cushion, in the flaps of which, in pockets corresponding to our knee-pads, are placed a pair of drawers in the off and a shirt in the near pocket. In the near wallet are packed a pair of socks or foot-cloths, a pair of gloves (if not in wear), a pair of Wellington boots, a pair of soles, and the two boxes with cartridges; in the off wallet, 1 cleaning brush, 1 polishing brush, 1 cloth brush, 1 curry comb, 1 grease box, 1 pipeclay box, 1 housewife, soap, razor, spoon, hymn book, pocket ledger, materials for repair of clothing, 1 fore and 1 hind shoe, 16 nails wrapped in straw, pipe and tobacco. In rear of the wallets, across the saddle, and rolled up, is placed the linen stable jacket, and over wallets and saddle the shabraque, which is kept in position by a strap passing horizontally round the wallets and behind the rear arch over the fans, and by the surcingle. The shabraque has holes cut in it in rear to let the cantle of the saddle and Ds fixed on the fans pass through it, also one on the off side in front to let the carbine muzzle pass into its bucket, which is fixed on the off wallet. The mess tin in its case (leather), with the bags of rice, salt, and coffee inside it, is buckled to the D on the off fan; the shoe case, with 1 fore and 1 hind shoe and 16 nails in it, and the forage cord, rolled up, to that on the near fan; over the fans the corn sack, with the reserve feed of oats, the nose bag, the portable bucket, and the man's reserve of biscuit, equally divided in both ends, is placed, and over that again the rolled great coat is fixed by the three baggage straps. To the wallets (covered by the shabraque) are also buckled (when carried) the hatchet, the coffee mill, or the pioneers' tools, and the forage cap is carried in a pocket inside the near flap of the shabraque. The carbine is carried with its muzzle in the bucket on the off wallet, barrel down, stock inclining slightly upwards, so as to be on a level with the rider's hip, and it is secured in this position by a strap from the small of the butt to the pommel of the saddle.

The revolver is carried by non-commissioned officers, trumpeters, and pioneers of Dragoons, Hussars, Lancers, Saxon Heavy Cavalry, and Bavarian Cavalry, in a case attached to the waist-belt or girdle.

The head-gear of a horse consists of a bridle-head, with bit with straight bars buckled to it, curb chain, and reins, head collar with brow band, noseband, and throat lash, and snaffle bit attached to the head collar by chains and Ts, with reins.

The "German" saddle in use in the Prussian Cuirassiers is of much the same construction as the "Hungarian" saddle, but

has no padded cushion for the seat, and longer flaps on the tree. The shabraque is placed over the horse blanket and under the saddle, and separate flaps cover the wallets. In the off wallet are carried the revolver, butt protruding and turned towards the rider, 1 shirt, 1 pair of drawers, part of the cleaning and grooming kit, the hymn book, and the pocket ledger; in the near wallet a pair of Wellington boots, a pair of soles, part of the cleaning and grooming kit, 2 horse shoes and 16 nails, &c. The stable jacket is placed over the corn sack, and the forage cap is stuffed under the breast of the cuirass. Otherwise the packing is as in the rest of the cavalry.

The Bavarian Cavalry pack their kit much the same as the cuirassiers, but the shabraque covers the saddle and kit as above described.

The weight carried by a cuirassier horse in marching order is estimated by Pelet-Narbonne in "*Der Kavallerie-Dienst*," from which the above details are taken, as 23 stone 0·388 lbs., of which the man weighs on an average 13 stone 5 lbs., the saddlery and kit, 6 stone 6·002 lbs., and the clothing and arms, 3 stone 3·386 lbs., and that carried by a hussar's horse as 18 stone 5·554 lbs.,* of which the man averages 10 stone 3 lbs., the saddlery and kit weighs 6 stone 7·630 lbs., and the clothing and arms 1 stone 8·924 lbs.

III. ENTRENCHING TOOLS AND CAVALRY PIONEERS.

Each Prussian Cavalry Regiment has, as part of its camp equipment, 108 hatchets (27 per squadron), carried by the men on the wallets, and 8 large shovels and 6 hatchets carried on the carriages.

For the destruction of railways and telegraphs, the 7 or 8 pioneers of each Prussian squadron carry the following:—

2 bags of tools, with wrenches, hammers, and chisels.

2 cases with clamp augers.

1 case with 4 gun-cotton discs.

1 case with detonators.

1 apparatus for climbing telegraph posts, consisting of a girth and 2 stirrups.

1 bobbin of silver thread.

On the march, those articles are carried on the carriages, but on expeditions they would be carried on the saddles.

In independent cavalry divisions, the two small-arm ammunition wagons carry 32 gun-cotton discs in leather cases, 80 discs in boxes, 100 detonators, and tools for the destruction of railways and telegraphs, besides 4 pairs of pincers, 4 sledge hammers, 4 large hammers, 16 wrenches, 4 pairs of pliers, 2 large pairs of pincers, 2 large crow-bars, and, as small stores, 12 augers, 12 small hammers, 24 chisels, and 12 wrenches.

* Almost exactly the weight given by Lord Wolseley for a British hussar (*Pocket Book*, p. 18).

In Prussia, everything relating to cavalry pioneers is kept secret, but in Bavaria their precise equipment has been laid down. In the Bavarian regiments, four men per squadron, one of whom must be a carpenter, are equipped as pioneers. They are placed in the rear rank, and, if necessary, a fifth man is added to hold their horses. They carry only swords and revolvers. The tools with which they are provided consist of:—

Pioneer, No. 1.—Axe (in case), and a bag containing 1 chisel, 1 pair pincers, 1 auger and handle, 2 gimlets, 1 measuring rule, and 1 rope, 8 feet long.

Pioneer, No. 2.—Shovel and handsaw (in case), and a bag containing 1 file, 2 clamps, 10 4·2-inch nails, 10 3·8-inch nails, and 1 rope, 8 feet long.

Pioneer, No. 3.—Shovel and hatchet (in case), and a bag containing 1 clamp, 10 3·8-inch nails, and 1 rope, 8 feet long.

Pioneer, No. 4.—Pickaxe (in case), and a bag containing 1 clamp, 10 6·6-inch broadheaded nails, and 4 ropes, each 8 feet long.

Beside the above, each Bavarian regiment has 93 hatchets, carried by the men, and 4 axes, 6 hatchets, 4 pickaxes, 12 shovels, and 60 ropes, 8 feet long, carried on the wagons.

In the Saxon Cavalry, 6 men per squadron are equipped and trained as pioneers, and are armed with swords and revolvers only.

IV. FIELD ARTILLERY.

(a.) *Clothing.*

Tunic (for Prussian, Württemberg, Hessian, and Bavarian Artillery):—Dark blue, cut as for infantry, double breasted in the Württemberg (13th and 29th) Regiments, single breasted in the others, with scarlet piping and yellow buttons, except in the 1st (Mecklenburg-Schwerin) *Abtheilung*, 24th Regiment, in which they are white. Collars black, with red piping, with 2 bars of yellow lace on each side in the Prussian Guard Regiments. Cuffs black, with red piping, Swedish pattern with 2 bars of yellow lace in the Guard, Swedish pattern without lace in all horse batteries, and in field batteries Brandenburg pattern with blue patches (with red piping in the Mecklenburg and Hessian batteries), except in the Bavarian field batteries, in which the patches are black. Shoulder-straps scarlet, with a grenade with 3 flames in the 1st Guard (except the Horse *Abtheilung*, which has plain shoulder-straps), a grenade with one flame in the 2nd Guard, an A and crown in the two Oldenburg batteries of the 1st *Abtheilung*, 26th Regiment, an L in the 25th Regiment, and the number of the regiment in yellow in all others.

Tunic for Saxon Artillery.—Dark green, with scarlet collar, cuffs, and piping. Dark green shoulder-straps with scarlet piping, number, and grenade. The horse batteries have metal epaulettes like the Guard Cavalry, lined with scarlet cloth underneath; yellow buttons.

Trousers.—Very dark grey with scarlet piping in all except the Bavarian Artillery, in which they are dark blue with scarlet piping.

Pantaloon (for mounted men).—Dark blue, without piping.

Helmet.—Of the same pattern as in the infantry, with the same differences for contingents and Guards and line, but the spike is replaced by a ball. In full dress, in the Guard white, in all the line horse batteries and in the Saxon (12th and 28th) Regiments black, and in the Bavarian Artillery scarlet horse-hair plumes are worn.

Forage Cap.—Dark blue, with black band and scarlet piping in all except the Saxon Artillery, in which it is green, with scarlet band and piping.

Great Coat.—Dark grey, as in the infantry or cavalry, with black patches on the collars. Shoulder-straps the same as on the tunic in the Guards and Saxon Artillery, dark blue, with scarlet piping and number in the remainder.

Boots.—Knee boots, with heel spurs for mounted men, Wellington boots for dismounted men.

Gloves. } As in the infantry.
Stocks. }

(b.) *Equipment.*

(1.) *Dismounted Men.*

Belts.—White leather waist-belt, with sword bayonet frog, in the Prussian and Bavarian Artillery, black in the 1st *Abtheilung* and 2nd Battery, 3rd *Abtheilung*, 24th Artillery (Mecklenburg), and in the 12th, 13th, 25th, 28th, and 29th (Saxon, Württemberg, and Hessian) Regiments.

Knapsacks.—Of the old infantry pattern, but without the side pockets for cartridges, suspended by two straps of leather, the same colour as the waist-belt, and hooking on to the latter, with steadying straps to the bottom corners of the knapsack. The wooden frame of the knapsack is covered with cowhide and opens to the rear. It is in shape like the new infantry knapsack, but somewhat larger, and in it are packed a pair of linen trousers, a linen jacket, a pair of short-legged boots, a pair of soles, a shirt, a pair of drawers, a grease box, towel, soap, razor, housewife, bags for rice, salt, and coffee, hymn book, pocket ledger, and a pair of foot-cloths.

Mess Tin.—As in the infantry, carried strapped on the top of the knapsack.

Great Coat.—The great coat is rolled up and worn *en bandoulière* over the left shoulder and under the right arm, passing round the knapsack.

Haversack.—Of linen (probably will be replaced by one of waterproof canvas), worn over the left shoulder and under the belt, hanging on the right side. In it are carried pipe, tobacco, knife, fork, spoon, and the balance of the day's rations.

Waterbottle.—Pattern as in the infantry, suspended over the left shoulder by a strap.

Sword Knot.—For dismounted men, as in the infantry, the colours for *Abtheilungen* being the same as for battalions (1st, 2nd, &c.), those for batteries as for companies.

Hand Coffee Mills.—17 per battery, 18 per ammunition column, carried on the wagons.

In peace the gunners carry their own knapsacks. In war they are carried on the wagons, and the mess-tins are strapped to the rolled greatcoats, in a fold of which are also placed the forage caps.

(2.) *Mounted Men.*

Belts.—As for dragoons, and of the same colour as for the dismounted men of the regiment.

Haversack and Waterbottle.—As for dismounted men.

Sword Knots.—Of leather, with the colours of the *Abtheilung* and battery.

Kits.—For non-commissioned officers, trumpeters, and horse artillery gunners the kits are carried and packed as in the cavalry with Hungarian saddles. For drivers, the whole kit is carried on the off-horse, except the drawers and shirt, which are placed in the pockets of the saddle-cushion, and the linen jacket and trousers, which lie flat under it. On the off-horse are carried:—In the saddle-cushion pockets, a pair of foot-cloths and a pair of gloves. In the near wallet, a pair of short Wellingtons, a pair of half-soles, the hymn book, pocket ledger, bag with salt, cloth for repairs, spoon, knife, fork, part of the rations, pipe, tobacco, housewife, pipeclay, sponge, bathbrick, comb, soap, awl, and waxed thread. In the off-wallet, revolver, grease-box, cleaning rags, currycomb, horse brush, clothes brush, shoe brush, oil brush, and razor. The nosebag of the riding horse is placed inside that of the off-horse, and both are strapped in front of the near wallet. Over the wallets and saddle is placed the shabraque, with the forage cap in a pocket in the near side. The corn-sack with the portable bucket, bags of rice and coffee, biscuit, and rations of oats, and the greatcoat are carried as in the cavalry.

In Bavaria the shabraque is only worn for riding horses, not for draught horses.

In Saxony the non-commissioned officers, trumpeters, and horse artillery gunners have valises, carried behind the saddle, and the greatcoat is strapped over the wallets. The greatcoats and valises of the drivers are carried on the off-horses.

Shabraques.—Dark-blue, cut as for dragoons, with scarlet trimming, in all except the Saxon Artillery, in which they are dark-green with scarlet trimming.

(c.) *Arms.*

Sword.—For non-commissioned officers, trumpeters, horse

artillery gunners, and all drivers, of much the same pattern as that for lancers, but somewhat shorter.

Revolver.—Of the pattern peculiar to the contingent (see page 180) for all the above ranks.

Sword for Dismounted Men.—A straight cut and thrust arm, with cross hilt and gutta-percha grip. It weighs about 2½ lbs., and has a leather scabbard, tipped with brass. It is about 2 feet 2 inches long in the blade, and is always worn in the frog on the waistbelt, even when the gunners are mounted.

Carbines.—Only carried by the dismounted men of ammunition columns, with 30 rounds of ammunition in an old pattern infantry pouch, and old pattern infantry sword-bayonet. The carbine is the rifle carbine, 1871 pattern (see page 206).

(d.) *Saddlery and Harness.*

The saddlery for riding horses is the same as that for cavalry with Hungarian saddles, except that two shoe cases are carried, one with a shoe, 16 nails and 8 studs; the other with a shoe and head collar-chain.

A set of draught harness comprises:—2 Hungarian saddles with saddle-cushions, girth, stirrups, stirrup leathers, and surcingle; 1 pair of wallets (for off-saddle), 3 baggage straps (for off-saddle), 1 shabraque (for off-saddle), 2 wither straps, 2 pairs of shoe-pockets, 2 bridles, 2 head collars, 2 head-collar chains, 2 horse blankets, 2 collars with hames complete, 2 back straps, 2 cruppers with hip-straps, 2 pairs of traces, 2 breechings (for wheel-horses), 2 pole straps (for wheel-horses) with hooks, 1 corn sack, 2 nosebags, 1 portable bucket, 1 whip, and 1 driver's legging. In ammunition columns shabraques are not worn. All harness and saddlery are of the natural colour of the leather, and pipeclaying the rope traces is unknown. The lead-horse's traces are hooked to trace links in the traces of the centre horses, and those of the centre horses to swingle-trees attached to a large swingle-tree on the pole. The traces of the wheel-horses are hooked to swingle-trees suspended on the splinter-bar. In the Saxon Artillery the centre traces are longer than in the others, as the system of draught is much the same as in the British Artillery as regards attachment of traces, though the pole is used.

V. FOOT ARTILLERY,

(a.) *Clothing.*

Tunics.—As in the Field Artillery of the various contingents, except that the shoulder-straps are white, with the number in red (no number in the Guard Regiment). The Saxon Foot Artillery Regiment has scarlet shoulder-straps.

Trousers.—As in the Field Artillery.

Helmet.—As in the Field Artillery. Only the Prussian Guard Regiment has (white) plumes.

Forage Caps.—As in the Field Artillery.

Greatcoat.—Dark grey with black patches on the collar (scarlet in the 12th Regiment); white shoulder-straps in the Guard, scarlet in the 12th Regiment, dark-blue with white piping and red number in the Prussian and Württemberg, and yellow number in the Bavarian Foot Artillery.

Boots
Gloves
Stock } As for dismounted men of the Field Artillery.

(b.) *Equipment.*

Belts
Knapsacks
Mess Tin
Haversacks
Sword Knot } As for infantry. The front pouches are of the pattern used by infantry non-commissioned officers. Belts white in the Guards, black in other regiments and battalions.

(c.) *Arms.*

Infantry rifle and sword bayonet, 1871 pattern.

VI. ENGINEERS.

(a.) *Clothing.*

Tunic.—Dark blue, except in the Saxon Pioneers, with scarlet piping, double-breasted in the 13th Battalion, single-breasted in the others. Collars and cuffs (Swedish) black, with scarlet piping, ornamented with two bars of white lace in the Guard Battalion and Railway Regiment. Shoulder-straps scarlet, with the number of the battalion in yellow, T in the Telegraph Company, E in the Railway Regiment, and without number in the Guard Battalion; white buttons.

Tunic for the 12th Battalion.—Dark green with scarlet collars, cuffs, and piping. Green shoulder-straps with scarlet piping, battalion number, and crossed pick and shovel; white buttons.

Trousers.—Dark grey in all but the Bavarian Battalions, in which they are dark blue, with scarlet piping.

Pantaloons.—For mounted men, dark blue.

*Helmet.**—As for infantry of the corresponding contingents, but with white metal ornaments. The Guard Battalion and Railway Regiment wear black horse-hair plumes in full dress.

Forage Caps.—For all battalions, dark blue with black band and red piping.

Greatcoat.—As in the infantry, with black collar patches; shoulder-straps the same as those of the tunic in the Guards, Railway Regiment, and 12th Battalion, dark blue with red piping and yellow number in the others.

Boots.—As in the Field Artillery.

Stock.—As in the infantry.

* Not worn by drivers of the pontoon trains in the field. A peak is worn by them on the forage cap.

(b.) Equipment.

Belts.—Black leather, as for infantry, with pouches as for non-commissioned officers.

Knapsack.
Mess Tin.
Haversack.
Waterbottle. } As for infantry.

Sword Knot.—As for the 1st Battalion of an infantry regiment.

The kits of mounted men are carried as in the Field Artillery, and their shabraques are the same as in that arm.

(c.) Arms.

Dismounted men have rifle carbines, 1871 pattern, and sword bayonets with saw backs. Non-commissioned officers, trumpeters, and lance-corporals of the pontoon trains have an old pattern cavalry sword, and a converted Chassepôt cavalry carbine, 1871 pattern (1873 pattern cavalry carbine in the 12th Battalion). Train drivers have only old pattern cavalry swords.

(d.) Harness and Saddlery.

In general as in the Field Artillery, but the wheel-horses, being driven from the box, have only pads.

(e.) Portable Entrenching Tools.

Each company carries 88 large shovels, 44 pickaxes, 45 axes, and 17 hatchets. These are suspended in cases on the left side of the knapsack. Men in the bridge trains carry no tools.

VII. TRAIN.

(a.) Clothing.

Tunic (except for the 12th Battalion).—Dark blue with light blue collars, cuffs (Swedish), shoulder-straps (with no number in the Guard Battalion or Hessian Company, scarlet number in the others), and piping. The Guard Battalion has two bars of white lace on the collars and cuffs. Yellow buttons. Double-breasted tunic in 13th Battalion.

Tunic for the 12th Battalion.—Light blue with black collars and cuffs and scarlet piping. Light blue shoulder-straps, with scarlet piping and number.

Trousers.—Dark grey with scarlet piping; light blue piping in the Bavarian Battalions.

Pantaloons.—Dark blue without piping, except those of the 12th Battalion which have scarlet piping.

Head-dress.—Shaco as for rifles in Prussia, Württemberg, and Baden (the latter with the Württemberg or Baden arms in

front) and, in full dress, white falling plumes for the Guard, black for the line battalions. Shaco as for the 103th Regiment in the Saxon Battalion. Infantry helmets in Bavaria, with black plumes in full dress.

Forage Caps.—Dark blue with light blue band and piping, except in the 12th Battalion, which has light blue forage caps with black band and piping.

Greatcoat.—Dark grey with light blue collar patch. Shoulder-straps as on the tunic in the Guard and Saxon Battalions and Hessian Company; dark blue with light blue piping and red number in the others.

Boots.

Gloves.

Stock.

} As in the Field Artillery.

(b.) *Equipment.*

Belts.—White pouch and sword belt, latter worn over the tunic, except in the 12th and 13th Battalions and the Hessian Company, in which they are black. Pouches of black leather. All dismounted men have black belts.

Kits are carried and packed as for mounted and dismounted men of Field Artillery respectively.

Sword Knots.—As in the cavalry of the respective contingents.

Shabraques.—Dark blue with light blue trimming, except in the 12th Battalion, in which they are light blue with black trimming piped with scarlet.

(c.) *Arms.*

Non-commissioned officers, mounted lance-corporals and trumpeters, artificers and workmen, and spare drivers (in war) in the Supply Columns have the 1871 pattern converted Chassepôt cavalry carbine, and carry 20 rounds in the pouch. The corresponding ranks in Bavaria have 1869 pattern Werder pistols or revolvers. Dismounted men and all other ranks have no firearm. Stretcher-bearers have revolvers.

Non-commissioned officers, trumpeters, lance-corporals, drivers, and mounted orderlies have an old pattern cavalry sword, very much curved in the blade, with single bar guard, and dismounted men have the old pattern infantry sword, with cross hilt.

(d.) *Saddlery and Harness.*

Riding horses have the same saddlery as those of the Field Artillery, draught horses the same as those of the bridge trains.

VIII. MISCELLANEOUS CORPS AND SERVICES.

Mounted Feld-Jäger (Courier) Corps.—Dark green tunics with scarlet cuffs, collars, and piping. Yellow Guard lace. Epaulettes without fringes, with green ground, and red lining.

underneath. Dark blue pantaloons. Dark grey overalls with red piping. Infantry helmets with black plumes. Black belts. Cavalry swords.

Prussian Palace Guard Company.—Uniform much the same as that of the 1st Foot Guards, with eight rows of white lace on the breast, and cross-belts for pouch and sword. Grenadier caps for full dress as in the 1st Foot Guards.

Hessian Guard Under-Officers Company.—Infantry uniform with yellow lace on the collar, and epaulettes without fringes of white metal. Helmet with white plume.

Bavarian Archers of the Guard.—Light blue tunics with black collars and cuffs with silver lace, and with white lace on the breast. Steel helmets with a gilt lion on the top, and cuirasses. Light-blue trowsers. White breeches and jack boots in full dress. Officers' swords and halberds.

Württemberg Palace Guard Company.—Like the Prussian Company, but with no grenadier cap.

Under-Officers' Schools.—Infantry uniform. Shoulder-straps, white at Potsdam and Ettlingen, scarlet at Jülich and Marienwerder, yellow at Bieberich, and light blue at Weissenfels, without number. Shoulder-straps as for Saxon Infantry, without number, at Marienberg. White piping on the cuffs at Ettlingen and Marienwerder.

Ordnance Corps.—Uniform as for Foot Artillery, but with black shoulder-straps with red piping.

Corps of Artificers.—As for the Ordnance Corps, but with F on the shoulder-strap.

Aspirant Paymasters.—Infantry uniform with blue cuffs and collars with white piping; white shoulder-straps with the number of the Army Corps in red; white buttons.

Armourers.—Dark grey frock coats (dark blue in the 12th Army Corps) with yellow buttons, black collars, and scarlet piping. Dark grey forage caps with black band, and dark grey trousers with scarlet stripes. Blue pantaloons for those of mounted corps. Side arms as for their corps. No helmets.

Saddlers.—As for mounted armourers, but with white piping.

Staff Guards.—Green tunics with light blue collars and cuffs. Epaulettes with red ground for Cavalry and scarlet shoulder-straps for Infantry Guards, with the number of the Army Corps. Cuirassier helmet for cavalry, infantry helmet for infantry. Forage caps, dark green with light blue band and scarlet piping. Other articles for Cavalry Guards as for dragoons, for Infantry Guards as for infantry. Cuirassier swords and revolvers in the cavalry, infantry armament in the infantry. Belts black.

Field Gendarmerie.—Dark green tunics with light blue collars and cuffs and scarlet piping. Dark green shoulder-straps with red piping, with the number of the Army Corps. Infantry helmets. Green girdle with light blue piping. Trowsers as for infantry, pantaloons as for dragoons. Black belts.

Cuirassier swords. A gorget of white metal with a number which runs right through the Mobile Army.

Body Guard Gendarmerie.—As for Staff Guards of the Guard Corps, with the Guard star in the epaulettes, and white plumes and aiguillettes in full dress.

Cadet Corps.—Infantry uniform with yellow Guard lace on the cuffs (Swedish), and in Lichterfeld two, in other establishments one bar of lace on the collar. Shoulder-straps at Lichterfeld, Culm, and Ploen, white, at Potsdam and Oranienstein scarlet, at Wahlstatt yellow, and at Bensberg light-blue, the various establishments with the same shoulder-straps being distinguished by piping on the cuff. Forage caps only, except at Lichterfeld, where the cadets have helmets with black plumes. Black belts.

Veterinary Personnel.—Dark blue tunics with black collars, cuffs, and shoulder-straps with crimson piping. Rest of the uniform as for infantry. Forage caps dark blue with black band and crimson piping. Gold lace with blue silk bars round the shoulder-straps. Blue pantaloons. Black belts. Cavalry swords.

Hospital Assistants.—Dark blue tunics with dark blue collars, cuffs, and shoulder-straps with the number of the Army Corps, all with scarlet piping. Forage caps dark blue with scarlet piping. Black belts. Infantry helmets. Other articles of uniform and equipment as for the regiments to which they are attached.

Bearer Companies.—Uniform, &c., as for the train, but with crimson instead of light blue as distinguishing colour. The only head-dress is the forage cap, with peak and chin-strap. Each man carries a large water-bottle, for washing wounds. Arms, revolver and sword-bayonet.

Sick Attendants.—Uniform as for Hospital Assistants, but with light blue piping.

Regimental Transport Drivers—As for other men of their own regiment, but with, in dismounted troops, dragoon pantaloons and boots. The only head-dress on active service is the forage cap, to which a peak and chin-strap are added.

IX. RESERVE AND LANDWEHR TROOPS.

As a rule, these troops have precisely the same uniform as the corresponding regiments of the active army, but the distinctive mark of Reserve Officers and of all ranks of the Landwehr is a cross, in the form of the Iron Cross, which is worn on the breast of the eagle, or other ornament in front of the helmet or shaco, and is also reproduced on the cockade on the forage cap. In Bavaria, the cross on the helmet is replaced by a star. Trials have lately been made with a blouse for the dress of second line troops, but it is believed that this is only intended for the Landsturm. The shacos formerly worn by the Landwehr have been replaced by the head-dress worn by corresponding arms of the first line troops.

(a.) Infantry.

Clothing as for the active regiments of the brigade to which they belong, but with the number of the brigade on the shoulder-straps, except in the 1st and 2nd Berlin Districts and 49th and 50th Brigades, which have no number. Those of the Teltow District have No. 11. The Guard Landwehr regiments wear the uniform of the corresponding Guard regiments.

Arms. For Infantry.—The Mauser rifle, 1871 pattern. This is a bolt arm, self-cocking, and provided with a safety-guard. The lock can be taken to pieces without special tools. The barrel and breech are separate, the latter being screwed on to the former. The cast-steel barrel is 33·46 inches long, the rifled part being 30·7 inches long. The bore is 0·433 inch. It has 4 grooves, 0·0157 inch deep, with a twist of 1 turn in 50 calibres. The cartridge chamber is 2·7 inches in length, with a maximum width of 0·5 inch. The rifle is sighted up to 1,600 metres. The rifle with its sword bayonet weighs 11 lbs 3½ ozs., without it 9 lb. 9 oz. The length is respectively 5 feet 11¼ inches and 4 feet 5 inches. The cartridge is the same as for the 1871–84 pattern rifle.

For Rifles.—The rifle carbine, 1871 pattern. This weapon is constructed on the same system as the Mauser rifle, but is shorter. Its weight with sword bayonet is 11 lbs. 2 ozs., without it 9 lb. 10½ ozs. Its length is respectively 5 feet 6¼ inches and 3 feet 1 inch.

Equipment.—The knapsack is the old pattern infantry one described for dismounted men of Field Artillery, but with a pocket on each side at the top for 20 rounds each. Two cartridge pouches are worn on the waist-belt in front, each for 20 rounds. Other articles of equipment will probably be altered to a similar pattern to that described for active infantry.

Entrenching Tools.—As for active infantry.

(b.) Cavalry.

The Reserve Cavalry regiments wear the uniform of the regiments keeping their stores in time of peace. They will probably be generally equipped as dragoons or lancers. In Bavaria the dress regulations lay down that the 1st Reserve Cavalry Regiment is to wear the uniform of the 4th Light Horse, the 2nd that of the 5th Light Horse. Equipment and saddlery will be the same as that of the Line Regiments. The firearm will be the converted Chassepôt carbine, 1871 pattern. Lances will not be carried by reserve lancer regiments.

(c.) Artillery, Engineers, and Train.

The uniform, equipment, and armament of those arms will be the same as in the active regiments, &c., corresponding.

X. BADGES OF RANK, DISTINCTIVE BADGES, ETC.

The various non-commissioned ranks are distinguished throughout the Army as follows:—

Sergeant-Major.—Gold or silver lace on the collar and cuffs. A button stamped with an eagle on each side of the collar. Officer's sword with officer's sword-knot.

Ensign.—As for Sergeant-Major, but with no button on the collar.*

Sergeant.—Gold or silver lace on collar and cuffs. Buttons on collar. Sword-knot of national colours.

Under-Officer.—Gold or silver lace on collar and cuffs. Sword-knot of national colours.

Bombardier.—Button on each side of the collar and sword-knot of national colours.

Lance-Corporal or Acting Bombardier.—Button on each side of the collar, privates' sword-knot.

One Year Volunteer.—A cord of the national colours round the shoulder-straps.

Drummers, Trumpeters, Buglers, and Bandmen.—Wings, generally of the colour of the collar with white or yellow lace, on the shoulders.

Hospital Assistants, Hospital Attendants, Stretcher Bearers (of bearer companies), &c.—A white band with a red cross round the left sleeve above the elbow (on active service only). Regimental stretcher bearers have a red band.

Shooting Prize Badges.—White bars of lace with a narrow black bar in the centre on the cuff or above it, in Prussia. In other States the badges are of the national colours.

Re-engaged Men.—A bar of lace of the national colours across the bottom of the shoulder-strap.

B. OFFICERS AND OFFICIALS.

Officers in general wear the same dress as their men, with gold or silver lace, and gilt or silvered buttons, where the latter have yellow or white lace. If the facings are black or crimson, the Officers have velvet facings.

The principal distinguishing marks are the epaulettes or shoulder-pieces, swords, sword-knots, and sashes.

The epaulettes are without fringes for Company Officers, with fringes of thin lace for Field Officers, and with fringes of thick stiff lace for General Officers. These fringes are generally of silver lace. The half moon of the epaulette is of plain metal of the colour of the buttons, the ground is of cloth of the colour of the men's shoulder-straps with the same numbers, &c. as on the latter, and the under surface is covered with scarlet cloth, except in the cuirassiers and regiments with light red or crimson facings, when the cloth is of the colour of the facings.

* The officer's sword-knot is only worn after passing the officers' examination.

Hussar Officers wear no epaulettes, but have twisted lace shoulder-cords. Epaulettes are worn by Officers with the tunic or frock coat in full dress, in society, when reporting to a superior, and at inspections (except in minor tactics). Lancer Officers wear epaulettes at all times when they are worn by the men, and always on active service, which no other Officers do.

The shoulder-pieces are worn when epaulettes are not laid down, and for Company Officers they are simply a 1-inch broad shoulder-strap of the colour of that worn by the men, covered with flat silver lace with the other national colours worked into it in silk, and the regimental number, &c., in metal. Field Officers have a plaited shoulder-piece of thin wire lace, General Officers such an one of thicker lace, silver, with the national colours.

Both epaulettes and shoulder cords have on them the badges of rank, which are:—

For 2nd Lieutenants, Majors, and Major-Generals	.. .. .	No star.
„ 1st Lieutenants, Lieutenant-Colonels, and Lieutenant-Generals	.. .. .	1 star.
„ Captains, Colonels, and Generals	.. .. .	2 stars.
„ General with the rank of Field-Marshal	.. .. .	3 stars.
„ Field-Marshal	.. .. .	crossed batons.

The officer's sword knot is of silver lace, with the national colours (other than white) worked into it in silk.

The officer's sash is likewise of silver lace, with the national colours worked into it in silk, as in other articles. It ends in tassels of lace and silk, and is worn round the waist with the tassels on the left side by all officers, except Adjutants and General Staff Officers (except the Chief of the Staff of an Army Corps) who wear it over the right shoulder. It is worn with the tunic only, and is not taken on active service.

Officers' helmets in the infantry have invariably scale chin-chains and metal binding on the front peak. Train officers wear Dragoon helmets.

Besides the articles of clothing worn by their men, officers (except those of Hussars) wear double-breasted frock coats of the colour of the tunic (blue in the Cuirassiers), with plain collars of the colour of those on the tunic and piping on the cuffs and skirts, when off duty. Officers of Hussars have undress tunics of the colour of the full dress tunic, except in the 3rd and 5th Regiments, in which they are dark blue, with narrow Hussar lace of the national colours. The officer's forage cap is the same as that of the men, but has a peak. In the field, officers may wear forage caps without peaks. Trouser straps are worn by officers of all arms, and the trousers or overalls are cut very tight. In the infantry, on active service or at manoeuvres, the trousers may be tucked into the boots.

Officers' sword-belts are invariably worn under the tunic.

Infantry and Engineer officers wear their swords in frogs, the hilt passing through a slit cut in the skirt; in other arms slings are worn. The pouch belts of cavalry, artillery, and train officers are covered with gold or silver lace, according to the colour of the buttons.

Infantry and Engineer officers wear in peace straight swords, with single bar gilt hilts and leather scabbards, but in the field have curved swords with steel scabbards and slings. Those of other arms have swords similar to those of their men, with steel scabbards, but of lighter make. Specially light swords may be worn in undress. Swords are *invariably* worn by German officers. Every officer carries on service a revolver (on the sash or strapped round the waist), a field glass, and a small case with maps, paper, pencils, &c., under the skirt of the tunic, on the right side. Infantry officers wear small knapsacks of black leather, with slings the same colour as those of their men, on active service and at manoeuvres.

Reserve officers wear the uniform of their regiment, with the Landwehr cross on the helmet and cockade of the cap (star in Bavaria).

It only remains now to note the dress of officers and officials of special corps, &c.

General Officers.—Dark blue tunic, with scarlet cuffs, collar, and piping. Dark grey overalls, with two broad scarlet stripes. Buttons gilt. Scarlet ground to epaulettes. Full dress tunic, with gold lace on the collar, cuffs, and skirts, worn without epaulettes, but with shoulder-cords and aiguillettes. Helmet as for infantry, with the Guard star and black and white plume of feathers in full dress. Generals from the cavalry or artillery wear a pouch-belt of gold lace, with pouch and a cavalry or artillery sword. Those from the artillery have balls on the helmet instead of spikes.

Bavarian general officers have light blue tunics with scarlet collars, cuffs, piping, and ground to epaulettes, and light blue overalls with two broad scarlet stripes. Helmet, &c., as above, with blue and white plume.

Other States as above described, but with plumes of national colours.

General Staff.—Dark blue tunic (light blue in Bavaria) with crimson collar, cuffs, piping, and ground to epaulettes. Buttons, silver. Two bars of silver lace on each side of the collar and on each cuff. Dark grey overalls (light blue in Bavaria) with two broad crimson stripes. Forage cap dark blue, with crimson band and piping. Infantry helmet with silver ornaments and white plume in full dress. Shabraque dark blue, with crimson trimming.

War Ministry.—As for the General Staff, but with gilt buttons and gold lace.

Staff Adjutants.—The uniform of their regiment.

Medical Officers.—Dark blue tunics with scarlet piping and yellow buttons. Dark blue (black velvet in Saxony) collars

and cuffs, each with two bars of gold lace. Dark blue ground to the epaulettes, with the staff of Æsculapius. Dark grey trousers with scarlet piping. Infantry officers' helmets. Blue forage caps, with blue band and scarlet piping.

Intendance Officials.—Dark blue tunics with crimson piping and white buttons. Dark blue velvet collars and cuffs, each with two bars of silver lace. Silvered epaulettes with silver ground, and half moons of embossed metal, and an eagle on the ground. Dark grey trousers, with crimson piping. Infantry helmet. Dark blue forage cap, with blue velvet band and crimson piping.

Paymasters.—Similar to Intendance officials, but with white piping on tunics and white cloth ground to epaulettes.

Officials of the Judge Advocate-General's Department.—As for Intendance Officials with scarlet piping and dark blue ground to the epaulettes.

Landwehr Cavalry Officers.—Dark blue tunics with scarlet collars, (Polish) cuffs, and piping. Ground of epaulettes, scarlet in the Guard; of the colour of the shoulder-straps of the infantry in the other Army Corps. In the Guard two, in the Line one bar of gold lace on the collar, in both one bar of gold lace on the cuff. Other articles of equipment and clothing as for Dragoons, with white plumes in the Guard, and black in the Line.

Landwehr Officers of other Arms.—As for the corresponding regiments, &c., of the regular army, with the number of the Brigade on the epaulette or shoulder-piece, except those of 1st and 2nd Berlin Districts and 49th and 50th Brigades, which have no number. Those of the Teltow District have No. 11.

Sergeant-Major Lieutenants.—As for 2nd Lieutenants of Landwehr of their arm, but with no sashes or epaulettes. Instead of the latter, shoulder-pieces $2\frac{1}{2}$ inches broad, with silver lace and the number of the Army Corps.

Non-commissioned Officers acting as Officers.—Officers' swords and sword-knots, with gold or silver lace round the shoulder-straps (only on mobilisation).

C. Colours and Standards.

Each battalion of infantry, pioneers, or rifles (except those of the 108th Regiment, and the 12th, 13th, and 15th Battalions of Rifles) has a colour of silk, 4 feet 6 inches square, with a pole 9 feet long, ending in a spear head. The pole is painted white in the Guards and Grenadiers, black in the others. The Guard (Saxon and Bavarian) colour is white, that of the Grenadiers or Line white in the Prussian, scarlet in the Württemberg, and of various colours in other regiments, with a cross in the form of the iron cross extending from edge to edge, and black in the Prussian and Württemberg, light blue in the Bavarian, green in the Saxon regiments, &c. In the centre of the cross is the national or other device on a coloured ground within a wreath, and in the corners of the colour are generally the initials of the

sovereign who gave it, within laurel wreaths. No names of battles are placed on the colours, but for campaigns, jubilees, &c., silk streamers are given to be fixed to the head of the pole. Once given, colours are never renewed, in fact the colours of the older regiments are mere poles with a few glorious rags attached to them, and newer streamers. Infantry battalions always take their colours on service, Rifles and Pioneers do not.

Artillery regiments have one colour per brigade, carried by the senior regiment of the brigade, but it is not taken on service.

Cavalry regiments, except the Saxon Cavalry and the Bavarian Lancers and Light Horse, have standards 1 foot 6 inches square, with lace fringes. The colours are generally as for infantry, &c., given above, and are carried on poles 8 feet 4 inches long. Streamers are given as in the infantry.

CHAPTER XVII.

ARTILLERY MATERIAL, SUPPLY OF AMMUNITION, AND ARTILLERY EQUIPMENT.

A. FIELD ARTILLERY MATERIAL AND EQUIPMENT.

(1.) *Field and Horse Batteries.*

Guns.—The two patterns of field guns in the German service are the so-called 8 cm. (or more correctly 7·85 cm.) gun for horse artillery, and the 9 cm. (more correctly 8·8 cm.) gun for field batteries.

The gun is a breech-loader formed of a steel tube, strengthened for half its length by steel hoops, and the following are its principal dimensions:—

	8-cm. Gun.	9-cm. Gun.
Length of gun	82·679 in.	82·679 in.
Distance of axis of trunnions from muzzle of piece	47·442 in.	48·229 in.
Length of bore	74·23 in.	73·43 in.
Length of rifled portion of bore	60·247 in.	58·66 in.
Calibre	3·091 in.	3·465 in.
Number of grooves	24	24
Depth of grooves	0·048 in.	0·048 in.
Twist in calibres	1 in 50	1 in 50
Width of grooves at breech	0·118 in.	0·118 in.
Width of grooves at muzzle	0·197 in.	0·217 in.
Exterior diameter of gun at muzzle	5·118 in.	5·512 in.
Exterior diameter of gun at breech	8·465 in.	9·055 in.
Weight of gun, complete	7 cwt. 2 qrs. 20 lbs.	8 cwt. 3 qrs. 12 lbs.

The system of breech-closing is Krupp's single cylindro-prismatic wedge, and obturation is obtained by a Broadwell ring of pure copper, backed by a steel plate in the wedge.

The vent passes obliquely through the wedge, and is provided with a cup-head to prevent the tube from flying backwards. The portion of the vent in the breech-wedge is of copper, that in the metal of the gun of steel, both screwed in. The tangent scale is of bronze and triangular. One face, marked G (*Granate*), is for firing common shell, and is graduated from 50 to 50 mètres up to 4,000 mètres for the 8 cm., and 4,200 for the 9 cm. gun. Alongside the figures of range are marked the corresponding derivations in sixteenths of degrees. The second face is marked S, and is used for firing shrapnel. It is graduated in the same manner up to 3,500 mètres. The third face is graduated in degrees and sixteenths of degrees up to 12° for the 8 cm., and 13° for the 9 cm. gun. The deflection leaf is graduated in sixteenths of degrees.

Ammunition.—Common Shell.—The common shells are double-walled, the inner wall being composed of 10 toothed rings for the 8 cm., and 12 for the 9 cm. shell. The shells are coated with hardened lead (60 per cent. lead, 20 per cent. tin, and 20 per cent. antimony). They are painted red.

Shrapnel Shell.—The shrapnel shells are single-walled. The bursting charge is contained in a central tube. Lead coating as for the common shell.

Case Shot.—The case shot is a tin cylinder, strengthened externally with three segments of zinc, .07 inch thick, and with a copper plate in its base provided with a ring and rope loop. It contains zinc balls, and has a zinc ring half way down on the outside to steady it in the bore.

The principal weights, &c., of the ammunition are as follows:—

	8-cm. Gun.	9-cm. Gun.
Powder charge	2 lbs. 12 oz.	3 lbs. 5 oz.
Weight of common shell, loaded	11 lbs. 3 oz.	15 lbs. 7 oz.
Length of common shell	7·8 in.	8·8 in.
Bursting charge	6 oz. 14 drs.	9 oz. 14 dr.
Initial velocity	1525 ft. sec.	1457 ft. sec.
Weight of shrapnel shell, loaded	12 lbs. 3 oz.	16 lbs. 9½ oz.*
Length of shrapnel shell, fuze	7·6 in.	8·7 in.*
Bursting charge	10½ drs.	12½ drs.*
Number of balls	160	274*
Weight of case-shot	11 lbs. 0½ oz.	16 lbs. 8½ oz.
Length of case-shot	9·2 in.	11·2 in.
Number of balls in case-shot	76 ..	76

Fuzes.—With common shell a metal percussion fuze, on much the same principle as that in use in the British service, is used. It is only placed in the shell at the moment of loading.

For shrapnel shell a metal distance fuze is used, much of the pattern of the old "Armstrong E" time-fuze and graduated for every 50 mètres up to 3,500 mètres in the latest pattern.

* 1882 pattern.

Powder.—German gunpowder for field guns contains 74 per cent. saltpetre, 16 per cent. charcoal, and 10 per cent. sulphur. Specific gravity, 1.64. Grains, 0.16 inch to 0.35 inch in diameter.

Gun Carriages.—The carriages are almost the same for both calibres, and are made of plates of 0.354-inch steel. The axle is of cast steel, and nearly cylindrical in shape, the centre being of somewhat larger diameter than the ends. The wheels are of oak with iron tyres and bronze pipe-boxes, and are 4 feet 6.6 inches in diameter. There are no axletree boxes, but the 9 cm. gun-carriages are provided with axletree seats, with backs and foot irons. Between the brackets of the trail is a box for small stores, and a cylindrical box for a case shot is fastened on the outside of the left bracket. There is a break for each wheel which can be put on by a small hand-wheel underneath the axletree seat, where it can be easily reached by the man sitting there. The handspike is of iron, and lies along the left bracket, hinged near the trail-plate. The sponge lies along the right bracket, and the rammer is carried between the brackets. The elevating gear consists of a double screw working in a block between the brackets, turned by a hand-wheel, and supporting the breech of the gun. The screw is steadied by two bars hinged on a bolt between the brackets immediately in rear of the trunnion holes.

Carriages, and in fact all artillery material, are painted blue, with white lettering (for carriages) on the right bracket. Thus No. 1 gun of the 6th Field Battery, 15th Regiment, is marked "15 A.R., 6 B. 1." The number of the regiment in Bavarian Artillery is followed by "Bay."

Limbers.—Limber wheels are interchangeable with those of the gun-carriage. The framework of the limber consists of two futchells, a bed for the pole (pintail) ending in a limber hook, two swingletrees, and a footboard. The limber box is of sheet iron, and the hinges of the lid, which is provided with a back-rest for the limber gunners, are towards the horses. The interior is divided into six compartments. On raising the lid, access is gained to four of these, viz., to a large compartment extending the whole depth of the box and to a smaller one of the same depth in the centre, and to two shallow compartments, one at each side. In the large centre compartment are placed the cartridges in seven leather cartouches, in the smaller one and in the two shallow compartments fuzes, tubes, and small stores. Underneath the shallow compartments are the shell, in three trays under each compartment, the trays holding each six projectiles for 8-cm. guns, or five for 9-cm., standing upright. Access is obtained to them through iron doors from the rear. Two rounds of case* can be carried in cylinders, one on each side of the pintail.

Ammunition Wagons.—The limbers of the ammunition

* One of these is usually carried on the gun.

wagons are similar to those of the guns. The wagon body has only one box, arranged in a similar manner to the limber box. The lower compartments open to the front and rear, and in the rear compartments are seven trays of projectiles, in the front, two, each tray holding six shells for 8-cm., and five shells for 9-cm. guns (one tray is left empty in the former). The 8-cm. wagon body carries 8, the 9-cm. body 10 cartouches, with respectively 6 and 5 cartridges in each.

Battery Store Wagons.—These are all of similar pattern to the ammunition wagons, the internal arrangement of the boxes only being different. On the fixed part of the lid of the box of the wagon body is a perch for spare wheels.

No. 1 wagon carries the articles a battery might require on the battle-field, such as 2 wheels, 1 pole, 1 spare breech-wedge, 1 elevating screw, 1 spare handspike, 1 screw-jack, 1 stretcher, 4 blankets, 1 case of bandaging stores, &c.

No. 2 wagon carries the reserve of clothing, part of the officers' baggage, spare harness and saddlery, quartermaster-sergeant's and pay-sergeant's books, 2 spare wheels.

In No. 3 wagon are packed collarmaker's stores and tools, the medical store chest, the rest of the officers' baggage, 1 spare pole, &c.

Each wagon carries 2 shovels, 1 pickaxe, 2 axes, 2 hatchets, and part of the reserve rations.

Field Forge.—The construction of the field forge is similar to that of a store wagon, and it carries the farrier's, wheeler's, tailor's, shoemaker's, and armourer's stores and tools, veterinary stores, anvil, bellows, &c. It has also 1 shovel, 1 pickaxe, 2 axes, 2 hatchets, and part of the reserve rations.

The following data refer to the carriages, &c.:—

	8-cm. Gun.	9-cm. Gun.
Angle of trail with the ground	32°	32°
Height of axis of trunnions	39·88 in.	39·88 in.
Extreme angle of elevation	18°	16½°
Extreme angle of depression	15°	16½°
Track	4 ft. 11·6 in.	4 ft. 11·6 in.
Weight of carriage with handspike ..	9 cwt. 2 qrs. 16 lbs.	10 cwt. 1 qr. 9 lbs.
Weight of gun and carriage, packed ..	17 cwt. 2 qrs. 5 lbs.	19 cwt. 1 qr. 11 lbs.
Weight of limber, empty	10 cwt. 1 qr. 5 lbs.	10 cwt. 1 qr. 9 lbs.
Weight of small stores	2 cwt. 1 qr. 1 lb.	2 cwt. 1 qr. 1 lb.
Weight of ammunition	4 cwt. 3 qrs. 4 lbs.	5 cwt. 1 qr. 15 lbs.
Weight of limber, packed	17 cwt. 1 qr. 10 lbs.	17 cwt. 3 qrs. 25 lbs.
Weight of gun-carriage and limber, packed	34 cwt. 3 qrs. 15 lbs.	37 cwt. 1 qr. 8 lbs.
Weight per horse without gunners ..	5 cwt. 3 qrs. 14 lbs.	6 cwt. 0 qr. 24 lbs.
Weight per horse with five gunners ..	.. ..	7 cwt. 2 qrs. 12 lbs.
Weight of ammunition wagon, packed ..	36 cwt. 2 qrs. 14 lbs.	40 cwt. 1 qr. 14 lbs.
Weight per horse without gunners ..	6 cwt. 0 qr. 12 lbs.	6 cwt. 2 qrs. 26 lbs.
Weight per horse with six gunners ..	.. ..	8 cwt. 0 qr. 5 lbs.

Packing of the Carriages.—The following is the method of packing the carriages in field service marching order:—

The Gun.

1 Case shot .. ..	..	In its box.
25 Friction tubes .. ..	..	In a tin box in the trail box.
15 Primers for percussion fuzes .. ..	..	In tin boxes in the trail box.
30 Safety pins for percussion fuzes .. ..	..
4 Primers for distance fuzes .. ..	..
1 Cover for the muzzle .. ..	..	On the muzzle of the gun.
1 Cover for the breech .. ..	..	Over the breech.
1 Cover for the elevating gear .. ..	..	Over the elevating gear.
1 Sponge .. ..	..	On the right bracket of the trail.
1 Hammer .. ..	..	In the trail box.
1 Tube pocket and lanyard .. ..	..
1 Fuze pocket, with key .. ..	..
4 Sliding plates for tangent scale .. ..	..
4 Cloths .. ..	..	On the trail box.
1 Padlock .. ..	..
2 Back-straps .. ..	..	On the axletree seats (9 cm. gun only).
2 Cushions .. ..	..

The Limber (for both Natures).

1 Case shot .. ..	..	In one of the boxes on the pintail.
1 Sponge and cover .. ..	..	Below, fastened to axletree and pole.
1 Handspike .. ..	..	Ditto.
1 Grease box with 4·4 lbs. grease .. ..	..	In a box under the limber in front of the axle.
1 Soft soap box with 4·9 lbs. soap .. ..	..
1 Tin bottle with 1·3 lb. oil .. ..	..	In a box under the limber in rear of the axle.
1 Tin bottle with 1·3 lb. glycerine .. ..	..
2 Side-leathers .. ..	..	Strapped on to the iron supports of the back of the limber seat.
2 Hatchets .. ..	..	In pockets on the side leathers.
1 Shovel .. ..	..	Strapped on in front of the limber box.
1 Pickaxe .. ..	..
1 Water bucket, with cover .. ..	..	Beneath the limber.
1 Cornsack .. ..	..	Strapped on top of limber box.
3 Nose-bags .. ..	..	Inside cornsack.
1 Padlock .. ..	..	On the limber box.
1 Spare small swingletree .. ..	..	Beneath the limber.
1 Gum-bucket .. ..	..	Ditto.
1 Spare large swingletree .. ..	..	On the footboard.
2 Picket posts .. ..	..	Ditto.

Limber Ammunition (for 8-cm. Guns).

24 Common shell, fuzed .. ..	..	Without primers in 6 trays, each with 6 shell.
12 Shrapnel shell, fuzed .. ..	..
32 Cartridges .. ..	..	In 7 cartouches.
25 Friction tubes .. ..	..	In a tin box.
30 Primers for percussion fuzes .. ..	..	All strapped into a box, in off compartment above shell.
30 Safety pins for percussion fuzes .. ..	..
8 Primers for distance fuzes .. ..	..

Limber Ammunition (for 9-cm. Guns).

20 Common shell, fuzed .. ..	..	Without primers in 6 trays, each with 5 shell.
10 Shrapnel shell, fuzed .. ..	..
32 Cartridges .. ..	..	In 7 cartouches.
25 Friction tubes .. ..	..	In a tin box.
30 Primers for percussion fuzes .. ..	..	All strapped into a box, in off compartment above shell.
30 Safety pins for percussion fuzes .. ..	..
8 Primers for distance fuzes .. ..	..

Small Stores in Limber Box (for both natures).

1 Cartouche strap	In centre compartment.
1 Hammer	In the small compartment in rear of the centre compartment, in a leather case.
1 Pair pincers	
1 File	
1 Plug-key	
1 Spanner	
1 Key for the screws of the breech-wedge	In the small compartment above the shell, on the near side.
1 Key for the fore-sight and vent-cone	
1 Lantern and candle	
1 Coffee-mill	
1 Pole-strap	
1 Back strap	Ditto. (Only in odd gun-limbers).
1 Forage measure (2·2 lbs.)	
10 Ties	
2 Parts of tyres	
16 Nails for tyres	
4 Leather washers for wheels	In the small compartment above the shell, on the off side.
1 Linchpin and strap	
1 Rasp	
1 Gouge	
1 Lanyard	
1 Pricker	
1 Spare tangent scale in case	
1 Spare vent-cone	
1 Fuze key (in fuze-box)	
2 Steel obturation plates	
2 Broadwell rings	
6 Tin plates for above	
6 Obturation rings for vent	
1 Pin for handle of wedge	
1 Spare foresight	
1 Ring-gauge	
1 Range-table	
1 Register of shooting	
1 Quadrant	
2 Shell-lifters	
1 Clip band	
9 Ties	
1 Special key for percussion fuzes	
1 Vent-cleaner	

Wagon Body (for 8-cm. Guns).

24 Common shell, fuzed	Without primers, in 8 trays of 6 shell each.
24 Shrapnel shell, fuzed	
48 Cartridges	
75 Friction tubes	
30 Primers for percussion fuzes	
40 Primers for distance fuzes	Distributed in two fuze-boxes.
4 Bodies for percussion fuzes	
2 Screws, cylinder, for fixing percussion fuzes	
4 Hammers for percussion fuzes	
2 Fuze keys	

Wagon Body (for 9-cm. Guns).

20 Common shell, fuzed	In 9 trays with 5 shell each.
25 Shrapnel shell, fuzed	
50 Cartridges	

75 Friction tubes	In 3 tin boxes.	Distributed in two fuze-boxes.
30 Primers for percussion fuzes .. ..	..	In 2 tin boxes.
30 Safety pins for percussion fuzes .. ..	..	In 1 tin box.
36 Primers for distance fuzes .. ..	..	In 9 tin boxes.
4 Bodies for percussion fuzes.. ..	..	In tin box.
2 Screw cylinders for fixing percus- sion fuzes .. ..	..	
4 Hammers for percussion fuzes .. ..	..	
2 Fuze keys .. ..	..	

Small Stores on and in Wagon Body (both Natures).

1 Shovel.	} Under the wagon body.	} Inside the wagon body.
1 Scythe handle*	..	..	..
6 Picket posts ..	..	..	..	Under the wagon body.
1 Pair side leathers	..	..	..	(On the guard-irons).
1 Scythe* and cover	..	..	..	On the side-leathers, off side.
1 Axe ..	..	..	..	On the side leathers, near side.
2 Padlocks ..	..	..	..	On the boxes.
2 Ties ..	..	..	..
2 Picket posts ..	..	..	..	{ On top of wagon body (in horse batteries only).
8 Knapsacks ..	..	..	..	{ On top of wagon body (in field batteries only).
2 Corn-sacks ..	..	..	..	(Field batteries only).
2 Picket ropes†..	..	..	..	(Horse batteries only).
4 Picket ropes ..	..	..	..	{ (Lead or centre in odd and wheel in even wagons).
1 Pair traces ..	..	..	..
1 Coffee mill ..	..	..	..
4 Lower parts for collars	..	..	..
1 Shell-lifter ..	..	..	..
1 Wedge for scythe*	..	..	..
8 Rings for scythe*	..	..	..

Wagon limbers are packed the same as gun limbers, except that they have no—

Soft soap boxes.
Spare large swingletrees.
Gun-buckets.
Handspikes.
Sponges.
Forage measures.
Nails for tyres.
Pole straps.
Coffee mills.
Spare linch-pins and straps.

Rasps.
Gouges.
Obturation parts, &c., in special
box.
Quadrants.
Prickers.
Lanyards.
Spare vent-cones.
Spare tangent scales.

Only 17 ties are carried in the limber, but it has 2 grease boxes and 2 cases of tools in field and 3 in horse artillery.

The above equipment, &c., tables are extracted from Kretschmar's "Taschenbuch für die Feld-Artillerie," 3rd Edition, 1885. Since then the proportion of shrapnel shell to common shell has been altered to 1 : 1, but no details of the new equipment are available.

* In field batteries, in the 2nd, 3rd, 4th and 6th wagons only.

† In field batteries, in 1st to 5th wagons, 3 each.

The following table shows the total ammunition carried by a battery :—

Where carried,	Field Battery.				Horse Battery.			
	Common Shell.	Shrapnel Shell.	Case Shot.	Cartridges.	Common Shell.	Shrapnel Shell.	Case Shot.	Cartridges.
Gun carriage .. ..	..	..	1	..	..	..	1	..
Gun limber	20	10	1	32	24	12	1	38
Ammunition wagon ..	40	35	2	50	48	36	2	86
Total for battery with 1st Line of (3) ammu- nition wagons ..	240	165	18	438	288	180	18	486
Total for 2nd Line of (5) ammunition wagons }	200	175	10	410	240	180	10	430
Total for battery ..	440	340	28	848	528	360	28	916
Rounds per gun	73½	56½	4½	141½	88	60	4½	152½
Total rounds per gun ..	184½				152½			

Firing at the usual rate of a round per gun every two minutes, a field battery could fire for an hour with its limber ammunition only, for another 1½ hours with that in its 1st line of wagons, and for another two hours with that in its 2nd line; total 4½ hours. For a horse battery those figures are 1½, 1½, and 2½ hours respectively; total five hours.

(2.) Ammunition Columns.

An Infantry Ammunition Column is composed of—

- 21 Small-arm ammunition wagons, 1859 pattern.. } 6 horses each.
- 1 Field forge, 1869 pattern.. .. . }
- 2 Battery store wagons, 1869 pattern 4 "
- (or 1 Battery store wagon, 1842 pattern, with 6 horses.)
- 1 Baggage wagon, with 2 horses.
- 1 Provision wagon, with 2 horses.

The small-arm ammunition wagons are the same as those described at page 82, and the battery store wagons, 1869 pattern, are much the same as the battalion baggage wagons described at page 81. All these carriages are painted grey to distinguish them from those of the artillery columns, which are painted blue, and one carriage in each column carries a white flag marked "Inf. M.C." Each carriage is also marked with the numbers of the Army Corps and column and its own number.

German works make each column carry 368,640 rounds of infantry ammunition. These figures appear under-estimated. The 21 wagons can really carry 403,200 rounds. Deducting 15,840 rounds for cavalry carbines and 6,240 rounds of pistol

ammunition (now replaced by an unknown number of rounds of revolver ammunition), there remain 381,120 rounds, thus exceeding by 13,080 the figures given by the Germans. Perhaps the difference is made up by rounds for other arms.

An Artillery Ammunition Column consists of—

- 20 Ammunition wagons (17 for 9-cm. and 3 for 8-cm. ammunition) (6 horses).
- 3 Battery store wagons (4 horses).
- 1 Field forge (6 horses).
- 3 Spare carriages with limbers (2 for 9-cm. and 1 for 8-cm. guns) (6 horses).
- 1 Provision wagon (2 horses).

The carriages may be of the 1873 pattern, the same as those in use in the batteries, or may be old (1864) pattern material converted to the 1873 pattern for the ammunition wagons and 1869 pattern for the battery store wagons. The marking on the carriages is the same as in the Infantry Ammunition Columns.

The amount of ammunition* carried in the wagons, &c., of an ammunition column is as follows:—

Carriage.	9-cm. Ammunition.					8-cm. Ammunition.				
	Common Shell.	Shrapnel Shell.	Case Shot.	Cartridges.	Total Rounds.	Common Shell.	Shrapnel Shell.	Case Shot.	Cartridges.	Total Rounds.
Wagon limber ...	20	10	2	35	32	36	12	2	42	50
Wagon body ...	50 } 70	15 } 25	...	66 } 100	65 } 97	54 } 90	18 } 30	...	84 } 126	72 } 122
Limber of spare gun ...	20	10	3	35	33	24	12	3	42	39
Carriage ...										

An Artillery Ammunition Column carries therefore—

	For 9-cm. Guns.	For 8-cm. Guns.
Common shell	1,230	294
Shrapnel shell	445	103
Case shot	40	9
Cartridges	1,770	420
Total rounds	1,715	405

The total for the six columns of an Army Corps is—

	For 9-cm. Guns.	For 8-cm. Guns.
Common shell	7,380	1,764
Shrapnel shell	2,670	612
Case shot	240	54
Cartridges	10,620	2,520
Total rounds	10,290	2,430

* The proportions of common shell and shrapnel here given do not correspond with those given for the batteries, but no later data are available for ammunition columns.

B. SUPPLY OF AMMUNITION.

(1.) *Artillery Ammunition.*

Assuming the artillery of an Army Corps to be composed of 15 field and 2 horse batteries, and that the third horse battery detached to the Cavalry Division has also to be supplied from the ammunition columns, the following table gives the number of rounds per gun which should be available on the battle-field:—

Where carried.	9-cm. Ammunition.	8-cm. Ammunition.
In 15 field batteries with 1st Line of wagons ..	6,435	..
In the 2nd Lines of wagons of 15 field batteries ..	5,775	..
In 3 horse batteries with 1st Line of wagons ..	..	1,458
In the 2nd Lines of wagons of 3 horse batteries ..	..	1,290
In the 1st Echelon of (3) ammunition columns ..	5,145	1,215
Total rounds	17,355	8,963
Rounds per gun	192½	220

And on the evening of the action there would be available—

In the 2nd Echelon of (3) ammunition columns ..	5,145	1,215
Rounds per gun	57½	67½
Grand total, rounds per gun ..	250	287½

(2.) *Small-Arm Ammunition.*

Each infantry soldier carries 100 rounds of ammunition (non-commissioned officers 70 only).

The first reserve of ammunition is carried in the company ammunition wagons, but as the construction and packing of these are at present unknown, the number of rounds carried under the old system of transport must here be considered. Each company had in its baggage wagon 2,980 rounds, and there were carried in the battalion ammunition wagon 19,200 rounds, giving a total for a 3-battalion regiment of 93,360 rounds, or 32½ for each of 2,900 rifles.

The second reserve is carried in the four Infantry Ammunition Columns, which transport each 368,640 rounds, or 1,534,560 in all, giving 61 rounds for each of 24,176 rifles in the Army Corps.

The total supply per rifle is therefore 100 + 32 + 61, or 193 (163 for non-commissioned officers).

Each cavalry soldier armed with a carbine carries 20 rounds in his pouch and 30 in his wallets, and each man armed with a revolver, 18 rounds in his pouch.

As regards the reserves for cavalry it is only possible to say that in the four columns of an Army Corps are carried 63,360 carbine and 24,960 revolver cartridges, and in the two wagons attached to the artillery of a Cavalry Division 30,720 carbine and 3,348 revolver cartridges.

Pioneers carry 70 rounds per man in their pouches. To replace expenditure they must draw from the infantry reserves.

C. SIEGE ARTILLERY.

The following are the various natures of siege guns and the special uses of each:—

9 cm. Heavy Gun.—To fire on animated objects, reply to the pieces of the mobile defence, fire on sap-heads, and enfilade counter-approaches. It may also be used for dismounting guns, destroying sandbag embrasures, &c., when it is inconvenient to bring heavier guns to bear. At ranges under 770 yards it has given good results against guns behind blinded embrasures. It is also employed to bring shrapnel fire to bear on the enemy's works and to annoy parties repairing damages in the defence works.

12 cm. Heavy Gun.—This gun is used to bring an accurate fire to bear at long ranges. During the first stages of a siege it is used to oppose the enemy's guns by shrapnel fire at long ranges, and later, at ranges below 1,650 yards, to dismount guns and destroy light parapets or walls of ordinary thickness, or for bombardment. It may be substituted for the belted 15 cm. gun if difficulties of transport prevent the latter from being used.

Short 15 cm. Gun.—Principally used for indirect fire to destroy earth or stone obstacles. It gives good results against detached walls with angles of descent of 24° , and remaining velocity of 1,083 foot-seconds. It is used also for enfilade fire at 2,000 yards range and over, and against non-blinded gun emplacements at 1,650 to 2,200 yards. Up to 1,200 yards it is used for dismounting guns, and gives good results with shrapnel against men behind cover, although the angles of descent are great. It is employed also for bombardments, and generally speaking in the 1st and 2nd Artillery Positions.

Belted 15 cm. Gun.—Its principal uses are for breaching at long ranges, dismounting guns up to 1,650 yards, bombardment, and shrapnel fire, which latter is very efficacious at long ranges. It fires also armour-piercing projectiles, and is generally used in the 1st Artillery Position.

Short 21 cm. Gun.—This gun is principally used for breaching at short ranges when the 15 cm. projectiles are not sufficiently powerful, *i.e.*, against strong masonry with large angles of descent, and at ranges up to 2,270 yards. It is used in the 2nd Artillery Position.

9 cm. Mortar.—Used against animated objects and material at ranges from 500 to 1,800 yards. The greatest effect is obtained with powder charges of from $4\frac{1}{2}$ ounces to $5\frac{1}{2}$ ounces,

with angles of elevation of from 15° to 25° , corresponding to ranges of from 660 to 1,320 yards. Specially used for enfilade fire, and of greatest effect when the shells are exploded against resisting objects. Principally used in the 2nd Artillery Position and in large batteries, whence a massed fire can be delivered. Platforms are not necessary, but the carriage must be as nearly horizontal as possible.

15 cm. Mortar.—This piece is principally employed for long range high angle fire, up to ranges of 2,250 yards. It can search the interior of works at medium and long ranges, fire against blinded guns, destroy platforms, and render communications in general impassable. It is principally used in the 2nd Artillery Position.

21 cm. Mortar.—Used for destroying casemates, escarps, traverses, ramps, &c., and for general purposes of bombardment. It is principally employed in the 1st Artillery Position, and its most effective range is about 2,200 yards.

Carriages.—The carriages at present in the service for the 9, 12, and 15 cm. short siege guns are of wood, fitted with arrangements for overbank fire, but these are being replaced by iron carriages for overbank fire. Those for the 15 cm. belted gun and 21 cm. gun are of iron. The carriages for the 9 and 15 cm. mortars are similar to the British mortar carriages, although the pieces themselves are breech-loaders; those for the 21 cm. mortars are similar to our 8-inch howitzer carriages, and are of iron.

The preceding table (p. 222) gives the principal data of the various pieces.

D. GARRISON AND COAST ARTILLERY.

The following table gives the principal data of the guns used in the inland fortresses and in the coast batteries. The long 21 cm., 28 cm. belted, and 30.5 cm. belted guns are special to coast batteries, the others common to both.

GUNS USED IN INLAND FORTRESSES AND COAST DEFENCES.

Data.	12-cm. gun, 1864 pattern.	12-cm. gun, 1873 pattern.	15-cm. steel gun.	15-cm. gun.	Heavy 16-cm. gun.	Long 15-cm. belted gun.	21-cm. belted and jacketed gun.	Long 21-cm. belted gun.	23-cm. belted gun.	30·5 cm. belted gun.
Material of gun ...	bronze	bronze	steel	bronze	hard bronze	steel	steel	steel	steel	steel
Method of loading ...	breech	breech	breech	breech	breech	breech	breech	breech	breech	breech
Breach mechanism ...	prismatic wedge	prismatic wedge	prismatic wedge	prismatic wedge	cylindro-prismatic wedge	cylindro-prismatic wedge	cylindro-prismatic wedge	cylindro-prismatic wedge	cylindro-prismatic wedge	cylindro-prismatic wedge
Calibre ...	4·736 in.	4·736 in.	5·97 in.	5·97 in.	5·97 in.	5·97 in.	5·97 in.	5·97 in.	5·97 in.	5·97 in.
Total length ...	82 "	82 in.	119·7 in.	119·8 in.	134 in.	151·6 in.	133·8 in.	135·4 in.	140·1 in.	122·0 in.
Length of bore ...	? "	75·79 in.	cwt. qrs. lbs.	107·2 in.	cwt. qrs. lbs.	133·8 in.	8·23 in.	164·8 in.	198·4 in.	227·2 in.
Weight of gun ...	cwt. qrs. lbs.	18 3 5	cwt. qrs. lbs.	50 cwt.	61 0 10	78 cwt. 3 qrs.	8 16 3 4	9 15	27 tons	35 tons.
Twist of rifling ...	16 2 12	18 3 5	49 3 23	1 in 52·6	? "	1 in 50	30	1 in 63	1 in 74	1 in 45
Number of grooves ...	18 "	18 18	24 "	24 "	24 "	24 "	30	30	28	72
Length of grooves ...	? "	59·21 in.	? "	92·76 in.	? "	106·9 in.	? "	129·5 in.	157·5 in.	171·5 in.
Weight of carriage ...	cwt. qr. lbs.	13 1 13	cwt. qr. lbs.	92·76 in.	cwt. qrs. lbs.	cwt. qrs. lbs.	tons cwt. qrs. lbs.	tons cwt. qrs.	tons cwt.	tons cwt.
Common shell, weight ...	33·3 lbs.	33·3 lbs.	60·9 lbs.	60·9 lbs.	61·1 lbs.	(coast.)	(coast.)	176 lbs.	455·3 lbs.	657 lbs.
" bursting charge ...	2 lbs. 7·5 oz.	2 lbs. 7·5 oz.	(60·43 lbs.)	4 lbs. 3 oz.	(60·43 lbs.)	(60·43 lbs.)	170·5 lbs.	10 lbs.	15 lbs. 15 oz.	22 lbs.
Shrapnel shell, weight ...	35·3 lbs.	35·3 lbs.	4 lbs. 3 oz.	4 lbs. 3 oz.	4 lbs. 3 oz.	4 lbs. 3 oz.	10 lbs.	...	...	...
" " number of bullets ...	1·16 oz.	1·16 oz.	(or 87 lbs.)	3·5 oz.	3·5 oz.	3·5 oz.	...	...	...	...
" " bursting charge ...	243	242	462	462	635	635	...	...	...	...
Weight of bullets ...	420 gra.	420 gra.	(or 635)	420 gra.	420 gra.	420 gra.	217 lbs.	217 lbs.	517 lbs.	716·6 lbs.
" " bursting charge ...	...	...	...	...	...	13·2 oz.	2 lbs. 12 oz.	3 lbs. 12 oz.	5 lbs. 8 oz.	6 lbs. 10 oz.
Service charge ...	{ 3 lbs. 1 oz. (common) } { 2 lbs. 13 oz. (shrapnel) }	3 lb. 5 oz.	5 lbs. 8 oz.	5 lbs. 8 oz.	{ 12 lbs. 12 oz. (if over 8,800 yds.) }	14 lbs. 8 oz.	30 lbs. 13 oz.	30 lbs. 13 oz.	137 lbs. 14 oz.	168 lbs. 11 oz.
" (chilled shell)	969 feet	1,066 ft.	1,076 ft.	1076 ft.	1,414 ft.	18 lbs. 12 oz.	41 lbs. 14 oz.	41 lbs. 14 oz.	127 lbs. 14 oz.	169 lbs. 11 oz.
Initial velocity, per second ...	6,270	6,270	5,600	5,600	8,800	1,591 ft.	1,381 ft.	1,463 ft.	1,552 ft.	1,901 ft.
Extreme range { common shell... on tables, in shrapnel	2,420	2,420	2,500	2,500	4,950	8,800	6,600	6,600	9,900	5,500
yards { chilled shell ...	...	...	...	...	...	?	6,600	6,600	6,600	5,500

All the guns and mortars used in the Siege Artillery are also used in the armament of fortresses. Probably no more 15 cm. long belted guns will be manufactured.

E. NAVAL ARTILLERY.

The guns in use on board the ships of the Imperial Navy are as follows:—

30·5 cm. *gun*.—Described above.

26 cm. *gun*.—Total length, 27 feet 11 inches (35 calibres); length of bore, 27 feet 0·5 inch; calibre, 8·14 inches; weight, 27 tons 2 cwt. 1 qr.; weight of chilled projectile, $3\frac{1}{2}$ calibres long, 607·2 lbs.; initial velocity, 1,783 f.s.; powder charge, 191·4 lbs. There are also 26 cm. guns of 20 and 22 calibres in length in the service, firing chilled projectiles 2·5 calibres in length, with charges of 125·4 lbs.

24 cm. *gun*, of 20 calibres in length, firing common shell 2·7 calibres in length, and chilled projectiles 2·5 calibres long, with a charge of 110 lbs.

24 cm. *gun*, of 30 calibres, firing common shell 4 calibres long, and steel shell 3·5 calibres long, with charges of 151·8 lbs.

21 cm. *guns* of both patterns, described above.

17 cm. *guns*, of 20 calibres in length, firing common shell 2·8 calibres long, and chilled projectiles 2·5 calibres long, with a powder charge of 16·5 lbs.

17 cm. *gun* of 25 calibres, firing the same projectiles as above, with powder charge of 30·8 lbs.

15 cm. *belted gun*, as described above.

15 cm. *heavy gun*, as described above.

12·5 cm. *gun*, of 23 calibres, firing common shell of 2·8 calibres in length, with a powder charge of 8·8 lbs.

12 cm. *gun*, 1873 pattern, described above.

10·5 cm. *gun*, of 35 calibres, firing a common shell of 3·8 calibres in length, with a powder charge of 8·8 lbs.

Field guns, as in the land army, for landing parties.

3·7 cm. *Hotchkiss* revolving guns.

CHAPTER XVIII.

ARMY STAFF AND COMMANDS IN PEACE.

THE Commander-in-Chief of the German Army is His Majesty the Emperor, who (according to the 1887 Army List) had a personal staff of 20 Aides-de-Camp General (*General-Adjutant*), 4 Generals of the suite (*General à la suite*), and 15 Wing Aides-de-Camp (*Flügel-Adjutant*). Of the Aides-de-Camp General, 17 are full Generals, and 3 Lieutenant-Generals; 3 command Army Corps, 1 is Governor of Berlin, 1 is Inspector-General of Engineers, 1 is Quartermaster-General, 1 is Chief of the Courier Corps, 1 is Chief of the Military Cabinet, 2 are Ambassadors at Foreign Courts, and the other 10 are without other employment. The 4 Generals of the Suite all hold commands; 1 is a Lieutenant-General, and 3 are Major-Generals. Of the 15 Wing Aides-de-Camp, all field officers, 6 belong to the Cavalry, 7 to the Infantry, 1 to the Field Artillery, and 1 to the Navy, and all except 2 hold other military or diplomatic posts.

The above staff forms the Emperor's Head Quarters, to which also belong the Body Guard Gendarmerie and the Palace Guard Company. The General-Adjutant on duty is the commandant of the Imperial Head Quarters.

The Military Cabinet (*Militair-Cabinet*) corresponds more or less to the Military Secretary's office in Great Britain, and is presided over by a General (at present one of the General Aides-de-Camp), assisted by a Colonel (at present a Wing Aide-de-Camp), and three other officers (two Majors and a Captain). It is divided into two sections. It is from this office that Gazettes and Cabinet Orders are issued, but the latter are always countersigned by the War Minister.

The two immediate auxiliaries of the Commander-in-Chief are the War Minister and the Chief of the General Staff of the Army, who are at the head of their respective departments, and who are both general officers of high standing. Neither is subordinate to the other, and each has his duties perfectly defined; those of the War Minister are the organisation and administration of the Army and its preparation for war, while the Chief of the Staff studies in time of peace the method of employment of the Army in war, and directs military operations. To create a parallel with the British organisation, the Prussian War Ministry corresponds more or less to our Ordnance, Finance, and Military Departments, less the Intelligence Division, while the Great General Staff is our Intelligence Division and Ordnance Survey Department. Neither of the heads of those great departments has any personal command over the troops, their functions being purely administrative, and the real commanders are the General Officers commanding Army Corps, under the

Emperor, who commands the Army in peace and takes the field with it in war. There is neither a Central War Ministry nor a Central General Staff for the entire German Army, Prussia, Saxony, Württemberg, and Bavaria, each keeping up their own, but all matters which apply to the entire Army are settled in principle by the Prussian offices, the details for their own armies being worked out by those of the minor states.

THE PRUSSIAN WAR MINISTRY.

The Prussian War Ministry administers all the troops of the German Army not belonging to the Saxon, Württemberg, and Bavarian Armies, within the limits of the Conventions referred to in Chapter II.

At the head of the War Ministry is the War Minister, at present Lieutenant-General Bronsart von Schellendorf, who has two personal Aide-de-Camps.

The Ministry is divided into three principal departments, the General War Department, the Military Economy Department, and the Department for Invaliding, besides several sections, the spheres of action of which are detailed below.

(1.) *The Central Section.*

Personnel:—A Field Officer as chief, and three civil officials of high standing. The two Aides-de-Camp to the War Minister do duty in this section.

To this section are referred all matters on which the War Minister has to give his own decision, and all those affecting the *personnel* of the War Ministry and Intendance. The section itself carries out all promotions, appointments, and retirements of all Intendance officials, such being announced in the Gazette, headed "*Durch Verfügung des Kriegsministeriums.*" It manages also all funds for the support of Intendance officials and employés of all ranks.

(2.) *The General War Department.*—(*Allgemeines Kriegs-Departement.*)

This Department has charge of all matters concerning the formation and organisation of the Army, and has as its Director a General Officer, who has an Aide-de-Camp. It is divided into six sections as follows:—

(a.) *Army Section.* *Personnel*:—A Field Officer as chief, 3 permanent and 2 attached Officers (the latter seconded).

Subjects:—Organisation of the Army in peace and war. Preparation of Vote 24 of the Budget (pay of the troops). Recruiting. Matters relating to the furloughed list and Landsturm. Manœuvres. Training of the Ersatz-Reserve. Distribution of the Army. Railways. Construction of Canals and Roads (as far as those concern the Army). Movements of Troops. Military Conventions. Matters specially concerning the General Staff

personnel, and that of the Survey Department, Railway Regiment, and Balloon Department. Literary and Statistical Matters. Office Duties in the Army.

(b.) *Infantry Section. Personnel*:—A Field Officer as chief, 2 permanent and 1 attached Officers (the latter seconded).

Subjects:—Affairs specially concerning the Infantry and Rifles, inclusive of matters connected with the training of the latter for the Forest Department. Infantry Institutions. Military Bands. Interior Duties. Garrison Duties. Police Duties. Provision of Small and Side-Arms. Affairs concerning Armourers. Military Education (except the Artillery and Engineer School and the Committee of Examinations for Captains of Artillery). Completion of the Peace Cadres of Officers. Under this section is also the Inspector of Military Bands.

(c.) *Cavalry Section. Personnel*:—A Field Officer as chief, one permanent and two attached Officers (one seconded, the other one of the Aide-de-Camps to the War Minister, who is also employed in the Central Section).

Subjects:—Affairs specially concerning the Cavalry. Military Riding Establishment. Veterinary Duties. Land, Body-guard, and Field Gendarmerie. Couriers. Postal Arrangements. Field Equipment of the Army. Train and Transport Service.

(d.) *Artillery Section. Personnel*:—A Field Officer as chief, 2 permanent and 2 attached Officers (one of latter seconded, one borne as supernumerary to the Foot Artillery), 1 Captain Artificer.

Subjects:—Affairs specially concerning the Artillery. Provision of the Army and Fortresses with Artillery Material and Ammunition. Care, renewal, and repair of the material in the Artillery Depôts. Artillery and Engineer School and Committee of Examinations for Captains of Artillery. Manufacture of Arms. Ordnance Corps and Corps of Artificers. Artificers' School. School of Gunnery.

(e.) *Engineer Section. Personnel*:—A Field Officer as chief, 2 permanent and 2 attached Officers (latter both seconded).

Subjects:—Affairs specially concerning the Engineers. Fortresses. Construction of new fortifications. Management of credits assigned for fortifications.

(f.) *Technical Section. Personnel*:—A Field Officer as chief, 1 permanent and 2 attached Officers (1 seconded, 1 borne as supernumerary in the Foot Artillery), 1 Captain of the Ordnance Corps.

Subjects:—Technical Matters connected with the Artillery. Advice to Artillery Section on construction of Ordnance. Artillery repairing shops. Laboratory. Gun Foundry. Projectile Factory. Powder Mills.

For special duties, two Field Officers are placed at the disposal of the General War Department. One of these is Inspector of Artillery Material, and the other Inspector of Small Arms.

(3.) *Section for Personal Affairs.*

This section treats all questions concerning the appointment and promotion of all officers. Its head is the chief of the Military Cabinet, and the officers of the latter carry on its duties.

To this section is attached the Confidential War Bureau (*Geheime-Kriegs-Kanzlei*) under a Field Officer, in which commissions are made out, information concerning officers of all ranks is collected, and the Army List is edited.

(4.) *The Military Economy Department.*—(*Militair-Oekonomie-Departement*).

The Director of this Department is a General Officer, who has an Aide-de-Camp. The Department is divided into five sections as follows:—

(a.) *Financial Section. Personnel:*—A civil official of high rank as chief, and two civil officials.

Subjects:—Affairs concerning the Establishments of Troops. Military Treasury. Administration of the sums provided in Votes 14, 15, 19, 20, 21, 22, 23, 40, and 43 of the Budget (see Chapter I). General Financial Administration. Extraordinary Votes. Military Widows' Fund. Deposits of Caution-Money. Income Tax and Stamp Duty.

(b.) *Provision Section. Personnel:*—A civil official of high rank as chief, one permanent civil and one attached military official.

Subjects:—Supply of Provisions and Forage. Military Bakery Sections. Provisioning of Fortresses. Receipt of Forage and Provisions by the Troops.

(c.) *Clothing Section. Personnel:*—A Field Officer as chief, with one officer and two civil officials.

Subjects:—Clothing of the Army and Landwehr. Musters of Troops. Preparation of Sealed Patterns. Provision of Colours and Standards. Preparation of Returns of Clothing. Clothing and Equipment Depôts. Personal Affairs of Paymasters and Aspirant Paymasters. Pay of the Troops. Treasuries with the Troops. Fund for the support of Officers. Charitable Funds. Supplementary Lodging Allowances. Rations, &c., for Recruits and Reserve Men. Travelling and Transfer Allowances. Arrangements with Railway Companies for Conveyance of Troops. Allowances for Officers and Men ordered to Watering-places for their Health. Medical Store Funds.

(d.) *Allowances Section (Servis Abtheilung). Personnel:*—A Field Officer as chief, and four permanent civil and one attached military officials.

Subjects:—Administration of the sums provided in Vote 14, Para. 11, and Vote 27 of the Budget. Barracks and Garrison Institutions, except Hospitals. Officers' Messes. Quarters and Allowances for the Troops. *Personnel* of the Garrison Administrations. Building and Utensil Funds. Administra-

tion of the War Ministry Building. Maintenance of Drill Grounds, Garrison Churches, and Cemeteries. Compensation for damages at manœuvres.

(e.) *Military Works Section.* *Personnel*:—An official of high rank as chief, with four permanent civil officials.

Subjects:—Advice to the other sections on technical questions of buildings, collection of materials, contracts, &c.

(5.) *The Department for Invaliding.*—(*Departement für das Invaliden-Wesen.*)

At the head of this department is a general officer, who has a captain as aide-de-camp, and it is divided into three sections as follows:—

(a.) *Pension Section.* *Personnel*:—A field officer as chief and four attached officers, three of them seconded in their regiments.

Subjects:—Pensions of Officers, Medical Officers, and military officials, and their widows and orphans.

(b.) *Maintenance Section.* (*Unterstützungs-Abtheilung.*) *Personnel*:—A civil official of high rank as chief, and two permanent civil and one attached military officials.

Subjects:—Pensions of lower ranks. Invalid Establishments. Pensions of Widows and Children of Soldiers, &c.

(c.) *Employment Section.* *Personnel*:—A field officer as chief, one permanent officer and one permanent civil and one attached military official.

Subjects:—Civil, &c., employment of non-active officers and men. Old Soldiers' Societies. Execution of Punishments. Disciplinary Divisions. Divine Service. Military Justice. Courts of Honour. Marriages. Choice of Officers. Nominal Rolls. Orders. Colours.

(6.) *Remount Section.*

This section is under a general officer as Inspector-General of Remount Operations, assisted by a Cavalry Officer as adjutant and by a civil official. Under it are all remount operations, the management of the horse-compensation-funds for adjutants, the remount dépôts, and the four Prussian remount committees (see Chapter XIX).

(7.) *Medical Section.*

Personnel:—The Surgeon-General of the Army as chief, one surgeon-general, two surgeon-majors, and a military official as permanent members, and three surgeons attached for duty.

Subjects:—Army Medical Service. Military Hygiene. Sanitary Police. Sanitary Statistics. Medical Superintendence of Recruiting and Invaliding. Supply of Medical Stores and Instruments.

Directions from this section concerning troops or their administration have to pass through the other sections of the War Ministry concerned.

Two officers are attached to the War Ministry for duty and seconded in their regiments, without being attached to any particular department or section.

Directly under the War Ministry are the Directory of the Potsdam Military Orphanage (the War Minister as chief, and the chief of the Military Economy Department and two military officials of the War Ministry as members), the Superior Committee of Examinations at the War Ministry, which conducts the examinations of candidates for the Intendence and for civil employment in the War Ministry, and consists of the chief of the Military Economy Department as President, and 1 officer and 4 officials of the War Ministry as members, and the General Military Treasury, presided over by the Paymaster-General assisted by two paymasters.

Under the War Ministry are also:—

- (1.) The Inspector of Infantry Schools (see page 263).
- (2.) The Inspector of Train (see page 263).
- (3.) The Experimental Committee for Small Arms (see page 266).
- (4.) The Military Riding Establishment (see Chapter III, Part II).
- (5.) The Artillery Dépôt Inspections (see page 260).
- (6.) The Arsenal in Berlin (see Chapter VI, Part II).
- (7.) The Inspector of the Veterinary Department (see page 264).
- (8.) The Inspector of Military Prisons (see page 264).
- (9.) The Committee of Examinations for Medical Officers (see page 267).
- (10.) The Medico-Chirurgical Frederick William Institution (see Chapter III, Part II).
- (11.) The Medico-Chirurgical Academy (see Chapter III, Part II).

and under the Technical Section are:—

- (12.) The Artillery Repairing Shops.
- (13.) The Laboratory.
- (14.) The Gun Foundry.
- (15.) The Projectile Factory.
- (16.) The Powder Mills (see Chapter VI, Part II).

The organisation of the War Ministry is thus exclusively military, and all its sections except four have officers at their head. The *personnel* is divided into officers, military officials, and civil officials and employés.

The officers are divided into two categories, those of the War Ministry proper and those attached for duty. The former wear the uniform of the War Ministry and belong to it, *i.e.*, are not borne on the seconded list of any regiment, although, as explained in Chapter I, Part II, they are frequently brought back into regiments of their own arm. The total number of those officers is 32, 2 of whom are lieutenant-generals, 2 major-

generals, 5 colonels, 3 lieutenant-colonels, 17 majors, and 3 captains, according to the Army List for 1887, these figures including the aides-de-camp.* The attached officers, with the exception of 2 captains of Foot Artillery, shown as supernumerary in the foot artillery (see Chapter IX), and one 1st lieutenant, are seconded in their regiments, and continue to wear their own uniform. Most of them remain in the War Ministry for a considerable time, and they have some advantages of promotion. They number 13 in all, 11 captains and 2 1st lieutenants, besides the 3 officers mentioned above. Thus the total budgetary strength of the Prussian War Ministry is 45 officers, who are allowed forage for 85 horses.

Only five military officials, the Inspector of Military Bands, three of the Intendence, and one of the Judge-Advocate's Department, are attached to the War Ministry for duty. The Medical Department employs seven medical officers (three attached) of all ranks.

The number of civil officials of the standing of officers is 26, of whom 11 are retired officers. Thus the total number of purely civilian officials employed in the War Ministry and its accessory branches is reduced to 15.

The subordinate *personnel* employed consisted of, in 1886-87:—

- 95 Copying clerks.
- 17 Accountants.
- 8 Assistant accountants.
- 55 Archivists.
- 2 Head clerks.
- 45 Clerks.
- 2 Telegraphists.
- 55 Porters, office boys, messengers, &c.
- 3 Workmen for the metallographic press.

The General Military Treasury has 3 military and 30 civilian officials, 4 employés, and 8 servants, and its branch at Carlsruhe for the 14th Army Corps, 3 officials, 1 employé, and 1 servant.

THE SAXON WAR MINISTRY.

The Saxon War Ministry only administers the Army of the Kingdom of Saxony, and is the highest authority for all matters concerning the *personnel* of officers, recruiting, justice, pensions, barracks, &c.

The War Minister is a General Officer, at present General Count von Fabrice, who has an Aide-de-Camp. The Ministry is divided into five sections, as follows:—

1st Division, Section A (Personnel, Recruiting, &c.). Chief, a Field Officer.

1st Division, Section B (Technical Affairs). Chief, a Field Officer.

* A field officer, a captain, and two retired officers have been added by the Budget for 1888-89.

2nd Division, Section A (Military Justice). Chief, a civil official of high rank.

2nd Division, Section B (Administration of Military Law). Chief, a civil official of high rank.

In the 1st and 2nd Divisions there are employed 8 officers, 2 civil officials, 10 employés, and 2 porters.

3rd Division (Intendance). Chief, a General Officer, Intendant of the Army, with 8 Intendants, 26 employés, and 2 subordinate employés.

To the War Ministry belong also a Field Officer detached as Military Plenipotentiary to Berlin, and a General Officer as Inspector of Remounts.

Under the Saxon War Ministry are also the Saxon General Military Treasury, with 7 officials and 6 employés, and the Medical Department Office, with 1 surgeon-general, 2 medical officers, 1 apothecary, 1 veterinary-surgeon, and 1 medical officer attached for duty.

THE WÜRTTEMBERG WAR MINISTRY.

The Württemberg War Ministry administers the 13th (Württemberg) Army Corps, and has as its head a General Officer, Major-General von Steinheil, who has an aide-de-camp.

It is divided into three sections, as follows:—

Central Office. Chief, the Aide-de-Camp to the War Minister. Duties as in the Prussian Ministry.

Military Section (Personnel, &c.). Chief, a Field Officer, with 2 officers and a medical officer.

Economy Section. Chief, a civil official (retired officer) with 2 civil officials.

In the War Ministry proper are therefore employed 5 officers, 1 medical officer, and 3 civil officials, with 10 subordinate officials and 3 servants.

To the War Ministry are attached:—

The Section for Military Justice. Chief, the Judge Advocate-General, with 3 military officials and 2 employés.

The Military Medical Section. Chief, a Surgeon-General, with 1 military official.

The Military Works Branch. Chief, a Field Officer.

The Military Pay Office. Chief, a military official, 4 employés, and 1 servant.

The Superior Recruiting Committee. President, a General Officer, members, a military officer and 2 civil officials, all holding other appointments in addition.

Including the latter sections, &c., the total establishment of the Württemberg War Ministry is 6 officers, 2 medical officers, 4 military and 3 civil officials, 16 employés and 4 servants.

THE BAVARIAN WAR MINISTRY.

The Bavarian War Minister is at present Lieutenant-General von Heinleth, who has an aide-de-camp.

The Ministry is divided into 9 sections, as follows:—

Central Section. Personnel:—A Field Officer as chief, with 17 civil employés, 1 military subordinate official, and a retired officer in charge of the lithographic office.

Subjects:—General correspondence, archives, *personnel* of the War Ministry.

Section for Personal Affairs. Personnel:—A General Officer as chief, with 1 officer and 3 civil employés.

Subjects:—*Personnel* of officers, medical officers, and military officials, their appointment, promotion, &c., &c. All matters requiring the personal decision of the War Minister are referred to this section.

General Military Section. Personnel:—A field officer as chief, with 6 permanent and 3 attached officers, and 1 attached civil employé.

Subjects:—Organisation, formation, and mobilisation of the Army. Army regulations. Distribution. Instruction and manoeuvres. General staff. Artillery and armament. Fortifications and military buildings. Military education. Recruiting. Landwehr. One-year volunteers. Remounts. Veterinary service. Decorations. Discipline. Archers of the Guard. Gendarmerie. Divine service. Police. Military political matters. Statistics.

Military Economy Section. The chief of this section is a field officer, with a military official and a civil employé. It is divided into four sub-sections.

1st Sub-section. Personnel:—A civil official as chief, with a military official and 4 civil employés.

Subjects:—Budget. Treasury. Pay.

2nd Sub-section. Personnel:—A civil official as chief, with 2 civil employés.

Subjects:—Provisions. Forage. Military funds.

3rd Sub-section. Personnel:—A civil official as chief, with 2 civil employés.

Subjects:—Clothing. Equipment. Allowances. Traveling Allowances.

4th Sub-section. Personnel:—A civil official as chief, with a military official and 3 civil employés.

Subjects:—Supplementary lodging allowances.

Military Works Office. Personnel:—A civil official as chief, and a civil employé.

Duties:—Advice on subjects connected with military works.

Section for Invaliding. Personnel:—A field officer as chief, with 2 military officials and 4 civil employés.

Subjects:—Invaliding of officers, medical officers, and military officials. Pensions of all ranks. Civil employment of military men. Invalid establishments. Widows' and orphans' pensions. Military charitable funds.

Military Medical Section. Personnel:—The Surgeon-General of the Army and a medical officer.

Subjects:—Medical stores and material. Medical administration. Hospitals. Courses for medical officers. Sanitary

statistics. Medical supervision of invaliding Boards. Medical personnel.

Military Justice Office. Personnel:—The Judge Advocate-General of the Army.

Subjects:—Justice in general. Military rights of property and in funds. Investment of capitals of military funds. Taxes. Military legislation. Religious affairs.

Military Fiscal Office. Personnel:—A civil official.

Attached to the War Ministry are an office for the audit of accounts, composed of 4 military officials (all holding other appointments) and 3 civil employés, a Committee for the examination of candidates for employment as military or War Ministry officials, with the Chief of the Military Economy Section as President, and 1 officer and 3 officials (all holding other posts in the War Ministry) as members, and a Committee for the management of military funds, composed of the Chief of the Section for Invaliding as President, and 3 officers of the garrison of Munich and 2 officials as members.

The total establishment of the Bavarian War Ministry is 17 officers, 2 medical officers, 6 military officials, 6 civil officials, and 42 civil employés, besides 19 subordinate employés, and a variable number of porters and messengers.

Under the Bavarian War Ministry are the following staffs, &c.:—

The General Inspector of the Army (see page 247).

The General Staff (see page 244).

The General Commands of the 1st and 2nd Army Corps.

The Inspectors of Cavalry, of Artillery and Train, of Engineers and Fortresses, of Military Education, and of Military Prisons (see pages 259 to 264).

The Corps Intendances of the 1st and 2nd Army Corps.

The School of Musketry (see Chapter III, Part II).

The Operative course for Military Medical Officers.

The Judge Advocate-General's Office.

The General Military Treasury.

The Inspector of Remounts.

The Gendarmerie (see Chapter XV).

To sum up, the total number of persons employed in the four German War Ministries and the branches immediately depending from them is as follows:—

	Officers.	Medical Officers.	Military Officials.	Civil Officials.	Civil Employés.	Subordinate Civil Employés.
Prussian Ministry	45	7	5	26	224	58
Prussian Military Treasury .. ..	..	..	8	33	5	9
Saxon Ministry, &c.	11	4	11	9	42	4
Württemberg Ministry, &c.	6	2	4	3	16	2
Bavarian Ministry	17	2	6	6	42	?
Totals	79	15	29	77	329	?

THE PRUSSIAN GENERAL STAFF.

(General-Staff.)

There is no part of the Army on which Germans look with more pride, and there is no body of officers which enjoys greater *prestige* than the General Staff. And in Germany the word "Staff" does not convey the same wide idea of all officers not doing regimental duty that it does in other armies. The General Staff corresponds, broadly speaking, in peace and war, to the Quartermaster-General's Department as the word is understood in India,* less the work connected with barracks, &c., and including the Intelligence Division, the Great General Staff at Berlin corresponding to the latter in its main cadre, and to the Survey Department in its auxiliary cadre. The work of the Adjutant-General's Department is performed by a distinct body of adjutants (*Adjutantur*), recruited from former adjutants of troops, and wearing the uniform of their regiments, whereas the General Staff has its own separate and distinctive uniform. All officers employed on the General Staff *must* have passed through the War Academy, and only a small proportion of the pupils of the latter can be appointed to it, and then only after a careful preliminary training while attached to the Great General Staff, under the eye of its chief.

The working out of orders relative to military operations is exclusively in the hands of the officers of the General Staff, and they have also to be constantly at work to keep the troops in a fit state for fighting and ameliorate their material condition. To fulfil those objects, they have not only to work out the orders of the General Officers, but have also to exercise a certain initiative, and have besides to supervise the working of the other branches, for which purpose all the General Staff Officers and all those of other branches under the General Commanding a body of troops of the strength of a Division or more are placed under the senior General Staff Officer with that body. Thus

* The Adjutant and Quartermaster-General's Departments in districts being amalgamated in Great Britain, the comparison does not hold out of India.

the influence of the General Staff Officer is great, and, to ensure that influence being uniformly exerted throughout the Army, and to secure uniformity of system, a careful and identical preliminary training is given to all officers of the General Staff.

As above mentioned, the General Staff is entirely recruited from officers who have passed through the War Academy. A certain number of the best pupils of each year are attached for two or three years to the Great General Staff, and in summer they are employed in topographical work and reconnaissances and in winter in the sections of the Great General Staff. Thus their abilities become thoroughly known, and a careful selection can be made from among them. Particular interest attaches to the conferences, in which the Chief of the Staff criticises the tactical problems worked out by those attached officers before all the officers of the Great General Staff, and it is in this way, as well as in the office, that he is able to imbue all his officers with that uniformity of views and methods which is so necessary for the conduct of the operations of enormous modern armies.

The Chief of the General Staff is at present General Field Marshal Count von Moltke, who has held that position since the 29th October, 1857, and to whom the present position of the General Staff and the success of the Prusso-German Army in the recent campaigns are mainly due. Of the General Staff Officers, about half are employed in the Great General Staff and the other half in the Army Corps, Divisions, and Fortresses, but these two bodies are by no means distinct, officers being frequently transferred from the Great General Staff to Corps or Divisions and *vice versa*. In addition, as mentioned in Chapter I, Part II (which see for the promotion of officers of the General Staff), General Staff Officers are frequently sent back to regiments for a longer or shorter period to maintain touch with the troops. The officers of the General Staff are divided into two cadres, the Main Cadre (*Haupt-Etat*) and the Auxiliary Cadre (*Neben-Etat*). The former furnishes all the officers for the 1st to 3rd Sections, part of these for the Railway and Military History Section of the Great General Staff, and all the officers with Army Corps, &c., the latter, part of the officers for the Railway and Military History Sections, and all those for the remaining four sections of the Great General Staff. The General Staff is thus divided into two cadres to avoid constant changes in the *personnel* of the scientific or technical sections of the Great General Staff. Officers of the *Neben-Etat* are seconded either from the *Haupt-Etat* or their regiments.

The Chief of the General Staff has two aides-de-camp, and is assisted by a Quartermaster-General (at present Lieutenant-General Count von Waldersee) who acts as deputy for his chief.

The Great General Staff (Der Grosse General-Stab).

The Great General Staff is established in a large building on the Königs-Platz at Berlin, is under the immediate supervision of the Chief of the General Staff and his Quartermaster-General, and is divided into nine principal sections and several offices and committees, the duties and *personnel* of which are as follows:—

Central Office.—At the head of this office is the senior aide-de-camp to the Chief of the General Staff. In it are settled all affairs concerning the officers, officials, and organisation of the General Staff, and its head has to make a daily report to the Chief of the General Staff. Further, through the Central Office passes all correspondence from the Prussian Central Survey Office, the Central Directory of Measurements, the War Academy (on scientific matters), and the Railway Regiment. In it are employed a secretary, four registrars, and two assistant registrars.

To it is attached the Finance Committee of the Great General Staff (exclusive of the survey sections), consisting of the first aide-de-camp, the secretary of the central office, and one officer.

The First Section.—Chief: a Field Officer of the Main Cadre.

Duties: Study of the military organisation, arms and equipment of the armies, military geography, fortresses, railways, roads, canals, statistics, &c., of Sweden, Norway, Denmark, Russia, Austria-Hungary, Roumania, Servia, Montenegro, the Ottoman Empire, Bulgaria, Greece, and the independent states of Asia, with the drawing up of plans of campaign in any of those countries in which German Armies are likely to operate.

The Second Section.—Chief: a Field Officer of the Main Cadre.

Duties: The same as in the 1st Section, for Germany.

The Third Section.—Chief: a General Officer of the Main Cadre.

Duties: The same as in the 1st Section for Great Britain, the Netherlands, Belgium, France, Spain, Italy, Switzerland, Portugal, and America, with the colonies and dependencies of those countries.

The Railway Section.—Chief: a Field Officer of the Main Cadre.

Duties: Training of officers for railway duties. Conduct of the railway service when the recruits are incorporated and the reserves dismissed, and during manœuvres. Collection of statistics of home and foreign railways. Approval of proposed lines from a military point of view. Preparation of time tables for the concentration of the Army in the event of war. Direction of the railway service on home and foreign lines in war.

As a rule, all officers of the Great General Staff do duty in this section for a certain time to familiarise them with the details of the important subjects worked in it. The Section corre-

sponds direct with Officers Commanding Army Corps on matters concerning the mobilisation and concentration of the troops, with the Commanders of Naval Stations, the Remount Section of the War Ministry, the Provision Section of the Military Economy Department on matters concerning the arrangements for feeding troops proceeding by rail and the despatch of provision trains, the Line Committees, the Railway Administrations, and the Railway Regiment. On mobilisation its Chief takes supreme charge of the railway service until a Director of Field Railways (see Chapter XXII) is appointed.

To this section are subordinated the 11 Prussian Railway Line Commissioners (see Chapter XXII).

The Military History Section.—Chief: a Field Officer of the Auxiliary Cadre.

Duties: The collection, arrangement, and preparing for use of all materials for military history and the preparation of accounts of wars of all periods.

It is from this Section that the Official Histories of the wars of 1864, 1866, and 1870 and other publications relating to military history have been issued, and the Section is now engaged on a history of the wars of Frederick the Great.

To it is attached the Library of the General Staff, and an Archive Office, an officer being in charge of each.

The Geographical and Statistical Section.—Chief: a Field Officer of the Auxiliary Cadre.

Duties: The compilation and keeping up to date of a military geographical account, as exhaustive as possible, of all European countries, and accounts in less detail of those beyond Europe. Officers of this section undertake reconnaissances into foreign countries. In this section also are prepared the maps of foreign countries to be used in war, and they are stored in a map-room attached to it.

Formerly this section used to publish a volume of geographical statistics called "*Registrande des Generalstabs*," but of late years its issue, at least to the public, has been suspended.

The chiefs of the above sections are all directly under the Chief of the General Staff; those of the following sections are under the Chief of the Survey (*Chef der Landes-Aufnahme*), a General Officer of the Auxiliary Cadre, who has an aide-de-camp, and who himself is under the Chief of the General Staff.

The Trigonometrical Section.—*Personnel*: A Field Officer of the Auxiliary Cadre as chief, six officers of that cadre, and six officers attached for duty and not seconded in their regiments.

Duties: Conduct of the Trigonometrical Survey of Prussia.

The Topographical Section.—*Personnel*: A Field Officer of the Auxiliary Cadre as Chief, and six officers of that cadre.

Duties: Conduct of the Topographical Survey of Prussia.

The Cartographical Section.—*Personnel*: A Field Officer of the Auxiliary Cadre as chief, and four officers of that cadre.

Duties: Preparation of the maps of the survey of Prussia.

The Map Room.—In this branch, which is under a retired officer, are kept the survey maps, and from it the trade is supplied.

For the last three sections, a Finance Committee, consisting of two officers of the sections, is appointed.

Lastly must be mentioned the *Intelligence Office (Nachrichten-Bureau)*, of which no mention is made in the budget, Army Orders, or Army List, but which is mentioned in demi-official works.* It is in charge of a field officer, who has a clerk under him, and in it all newspapers, books, and periodicals are read, any information they may afford being communicated to the sections concerned.

The total number of officers employed in the Great General Staff, according to the Army List for 1887, corrected by the budget for 1887–88, is as follows:—

	General Officers.	Colonels.	Lieutenant-Colonels.	Majors.	Captains.	1st Lieutenants.	Total.
Chief of the Staff	1	..	..	..	..	..	1
Aides-de-Camp to ditto ..	..	..	..	1	1	..	2†
Quartermaster-General..	1	..	..	..	..	..	1
Main Cadre	1	2	..	22	13	..	38
Auxiliary Cadre.. ..	1	5	2	7	35‡	..	50
A.D.C. to Chief of Survey ..	..	..	..	..	1	..	1†
In charge of map-room..	..	..	..	1	..	..	1§
Railway Line Commissioners ..	..	1	6	4	..	..	11
Totals	4	8	8	35	49	..	105
Attached to Main Cadre ..	..	..	..	..	3	51	54
Attached to Auxiliary Cadre ..	..	..	..	..	1	7	8

There are no means of ascertaining the distribution of officers to sections at present, as in the Army List only the chiefs of sections and the officers attached to the survey sections are mentioned. Of the 38 officers of the main cadre, 9 are shown as professors at the War Academy (in addition to their other duties), and 3 as on detached duty with the Embassies at Berne, and Paris (2). Five officers are shown as "aggregated" to the General Staff, three of them being attached to the Embassies at Rome, Madrid, and St. Petersburg, one employed in the Great General Staff, and one attached to the General Staff of an Army Corps. On the seconded list of the General Staff are borne 7 colonels, 2 lieutenant-colonels, 4 majors, and 15 captains, who are either employed

* Fröhlich "Heerwesen," Part I, p. 353.

† These Officers belong to the "Adjutantur," not to the General Staff.

‡ A captain has been added by the 1888–89 Budget.

§ Retired Officer not belonging to the General Staff.

in the *Neben-Etat*, in Württemberg on the General Staff, or as aides-de-camp to Royal Princes. Four officers of the *Neben-Etat* are employed as professors in the War Academy, in addition to their other duties.

The Chief of the General Staff is allowed forage for 6 horses, the Chief of the Survey for 5, the Chief of Sections of the Main Cadre for from 3 to 5, and those of the Sections of the Auxiliary Cadre for from 2 to 5. Other officers of the Main Cadre receive forage for 3 horses, field officers of the Auxiliary Cadre for 2, and captains of the same for 1 only.

The civil *personnel* of the Great General Staff consists of—

Clerks, &c.	..	..	..	..	22
Servants, porters, &c..	for	the	first	five	
sections	..	..	..	..	12
Officials and clerks	..	..	..	..	101
Auxiliary topographers, engravers, litho-					
graphers, and draughtsmen	..	..	..	..	133
Servants and porters for the survey sections					12
Total civil employ��es of all classes ..					230

Under the Chief of the General Staff are also—

- (1.) The War Academy.
- (2.) The Railway Regiment.
- (3.) The Military Railway.

The General Staff with the Troops.

The total number of officers employed with the troops is 85, comprising 3 general officers, 6 colonels, 7 lieutenant-colonels, 34 majors, and 34 captains, with one vacancy for a captain. Of these, 16 officers of the ranks of major-general, colonel, or lieutenant-colonel are chiefs of the General Staff in the 14 Prussian Army Corps and to the Inspectors-General of Field and Foot Artillery. Of the other ranks, two officers are attached to the headquarters of each of the Army Corps (three in the 15th Army Corps) and one to each division of the Army Corps. The senior and the junior General Staff Officers with each Army Corps are usually attached to its headquarters, while those intermediate in rank are attached to the divisions. Besides the above, one General Staff Officer is on the staff of each of the fortresses of K  nigsberg, Cologne, Strassburg, Metz, Thorn, Posen, and Mainz.

The chiefs of the General Staff of Army Corps are allowed forage for four or five horses according to rank, and all other General Staff Officers are allowed for three.

One officer "aggregated" to the General Staff is at present (Army List, 1887) employed with the headquarters of the 5th Army Corps, filling a vacancy, and one on the seconded list, filling a vacancy in the General Staff at Mainz.

The duties of the officers of the General Staff with the

troops in peace may be defined as follows, varying, of course, with the nature of the command of their respective chiefs:—Marches, quarters, distribution of troops, lines of march, route marches, manœuvres, and drill grounds; preparations and plans for mobilization; selection of ground for manœuvres and determination of the compensation to be paid after such; examination of new roads and of those of which the direction has been altered; frontier regulations; political intelligence; strength, condition, and distribution of neighbouring armies; pontoons and bridges; matters, except technical, connected with artillery and engineers; military schools; armament and provisioning of fortresses; restitution of deserters (international); maps, plans, sketches, reconnaissances, and topographical details.

Officers of the General Staff of the Army Corps conduct the office work under the superintendence of the Chief of the Staff and in accordance with the resolutions of the General Commanding. Should the latter be absent and no successor be appointed, the Chief of the General Staff transacts the business of the corps independently. The General Staff Officers of Divisions act in a similar manner.

The officers of the General Staff with the troops, while acting under the orders of the General in command, stand at the same time in such relation to the Chief of the General Staff of the Army, that they receive from him all orders with regard to promotion and transfer, as also projects for reconnaissance, instructions for staff journeys, and orders for their scientific training.

A word must be said as to the "staff journeys." These take place each year in about ten of the Army Corps of the German Army, and are under the leadership of the Chief of the General Staff of the Corps. They last 21 days, and are usually composed of 2 field officers, 4 captains, and 4 lieutenants from the regiments of the corps, besides General Staff officers as instructors. If a war school is included in the territory of the Army Corps, one of the officers of its cadre is also attached. An under-officer and a lance-corporal of cavalry are attached as a billeting party, and carriage is requisitioned for the officers' baggage. Non-mounted officers are provided with troop horses. The object is to train officers for temporary employment on the General Staff, and for this purpose tactical problems are worked out on the ground, reconnaissances made, positions and camping grounds selected, &c. Great value is attached to these exercises.

The functions of the General Staff in war are thus defined by General Bronsart von Schellendorf in his "Duties of the General Staff":—

1. Working out of all arrangements for the quartering, security, marching, and fighting of all troops, according to the varying conditions of the military situation.

2. Communicating the necessary orders, either verbally or in writing, at the right time and in sufficient detail.

3. Obtaining, collecting, and working out in order all materials which concern the nature and military features of the theatre of war. Procuring maps.

4. Collecting and estimating the value of information received concerning the enemy's forces, and reporting on the same to the higher military authorities.

5. Keeping up the fighting condition of the troops and being constantly informed of their condition in every respect.

6. Charge of diaries, publishing reports on engagements, and collection of important materials, to afterwards form a history of the war.

7. Special duties, viz., reconnaissances.

THE SAXON GENERAL STAFF.

The Saxon General Staff is distinct from that of Prussia, but its officers are appointed in a similar manner and pass through the War Academy at Berlin. The Saxon General Staff officers, properly speaking, are only 8 in number, of whom 2 are detached for duty to the great General Staff at Berlin, and the others are employed with the 12th Army Corps, 1 as Chief of the Staff, 2 with corps headquarters, and 1 with each of the three divisions. The ninth officer shown in the budget is a lieutenant-colonel of the infantry attached as Railway Line Commissioner in Dresden. Of the 8 staff officers, 1 is a colonel (Chief of the Staff), 4 are majors, and 3 are captains.

There is thus in Saxony no institution corresponding to the Great General Staff in Prussia, but to the headquarters of the corps is attached the "Engineer Section of the General Staff," which is divided into two sub-sections, one for military works and one for the survey of the kingdom. 1 colonel, 2 majors, and 2 captains of Engineers are employed in this section, to the survey sub-section of which a 1st lieutenant of Infantry is also attached for duty, and 1 captain of Engineers is shown as detached to the 12th Pioneer Battalion. To the survey sub-section are attached 2 topographers (officials), 5 engravers, 1 clerk, and 1 servant.

THE WÜRTTEMBERG GENERAL STAFF.

As in Saxony, the Württemberg General Staff is distinct from the Prussian, but sends an officer to the Great General Staff in Berlin. The establishment of the Staff, according to the 1887 Army List, is 6 officers, of whom 1 is a lieutenant-colonel, 2 are majors, and 3 captains. The lieutenant-colonel (who is an officer of the seconded list of the Prussian General Staff) is Chief of the Staff of the 13th Army Corps, 2 officers are employed at corps headquarters, one is attached to each of the Divisions, and one to the War Ministry. On the seconded list of the Württemberg General Staff are 5 officers—2 colonels, a lieutenant-colonel, a major, and a captain; one of these

commands a Prussian infantry regiment, two are chiefs of the Staff of Prussian Army Corps, one is Staff Officer with a Prussian Division, and one is attached to the Great General Staff in Berlin. It is evident that, though as corps the Prussian and Württemberg General Staffs are distinct, there is nothing which prevents their officers being employed outside their own contingent.

The budget shows 7 officers with 22 horses on the establishment of the Württemberg General Staff.

THE BAVARIAN GENERAL STAFF.

In Bavaria, as in Prussia, the General Staff is divided into the Great General Staff and the General Staff with the troops.

The Great General Staff is presided over by the Chief of the General Staff of the Army, at present Lieutenant-General Verri della Bosia, and is divided into three sections, an office for military history, a topographical bureau, and a record office and library. To the three sections are attached the officers of the main cadre, to the other offices those of the auxiliary cadre.

The duties of the three sections are as follows:—

1st Section.—Military organisation of Bavaria and of Germany; preparation and keeping up to date of military maps.

2nd Section.—Study of the armies and topography of France, Austria, Italy, and Switzerland.

3rd Section.—Railways, telegraphs, roads, and lines of communication service.

To these three sections are attached 5 officers of the main cadre, with 7 officers attached for duty and 1 official.

Under the Chief of the Staff are also two officers as Railway Line Commissioners in Munich and Würzburg.

The office for Military History is in charge of a Lieutenant-Colonel on half-pay with a retired Captain as assistant. To it is attached the Army Museum in Munich.

The Topographical Bureau employs a Major-General as chief and 6 officers (two of them on the retired list), besides 3 civil officials for the printing presses, and in addition 6 1st Lieutenants and 6 2nd Lieutenants are attached for duty.

Finally the Record Room and Library employs 3 officers, two of them on half-pay.

The total establishment of the Bavarian Great General Staff is:—

	Officers.			Officials.
	Main Cadre.	Auxiliary Cadre.	Attached.	
Chief of the Staff ..	1	..	..	..
Three sections ..	5	..	7	1
Line Commissioners ..	..	2	..	..
Military History Office ..	..	2*	..	..
Topographical Bureau ..	..	7†	13	3
Library ..	..	3†	..	..
Totals ..	6	14	20	4

Ten clerks and 25 draughtsmen, engravers, photographers, &c., are likewise employed.

Three officers of the main cadre are attached to the Prussian General Staff, and one to the Bavarian War Ministry, and four officers are borne on the seconded list of the Bavarian General Staff, three of them employed in the Bavarian War Ministry, and one in the Bavarian War Academy.

Ten General Staff officers are attached to the two Army Corps of the Bavarian Army, distributed as in Prussia, and one is attached to the Ingolstadt Fortress Staff.

The total number of officers of the main and auxiliary cadres of the Bavarian General Staff is therefore 35, for whom 82 horses are allowed, besides 4 officers on the seconded list and 20 attached officers.

Including the 14 Railway Line Commissioners, and excluding the aides-de-camp in the Prussian Great General Staff and those half-pay and retired officers who are not General Staff Officers, the total number of General Staff Officers in the German Army is—

						Officers.	Horses.
Prussia	..	Great General Staff	..	..	..	101	} 481
		General Staff with troops	..	..	..	85	
Saxony	..	General Staff	..	..	..	9	26
Württemberg.	..	General Staff	..	..	..	7	22
Bavaria	..	Great General Staff	..	..	..	14	} 82
		General Staff with troops	..	..	..	15	
Totals	..	..	..	..	..	231	611

THE ADJUTANT SERVICE.

Adjutants are divided into three categories:—

(1.) Adjutants to His Majesty the Emperor. These correspond to Aides-de-Camp to the Queen in the British Service. See page 226.

* Neither General Staff Officers. † Two on retired list or on half-pay.

(2.) Adjutants to Royal Princes, or to Princes of reigning German Houses. 41 Officers of all ranks from lieutenant-general to 1st lieutenant are included in this category in the Prussian Army List for 1887, 8 in the Saxon, 9 in the Württemberg, and 16 in the Bavarian List. The latter three figures include the aides-de-camp of the Kings of those countries. These officers correspond to aides-de-camp and military secretaries in the British Service.

(3.) Staff Adjutants, or Adjutants with troops. There is no such personage as a personal aide-de-camp to a general officer in Germany. All Adjutants perform office duty, and correspond more to officers of the Adjutant-General's Department in the British Service. Their personal and social duties towards their General are in addition to their other duties. Adjutants with troops correspond to Adjutants with British troops as far as their office work is concerned. They are the Staff Officers of their Commanding Officers, and have charge of the instruction of the band and drums, but have absolutely nothing whatever to do with the drill and training of the companies, squadrons, and batteries. They are on the establishments of their regiments.

Staff Adjutants are selected from former Adjutants of regiments, &c., or from officers who have passed through the War Academy, and may be said broadly to perform all the Staff duties not laid down as the province of the General Staff at page 242. In the case of those commands to which no officers of the General Staff are assigned, the Adjutants transact all branches of the office work.

The duties of Adjutants may be defined as follows:—Daily orders. Countersign. Garrison and guard duties. Returns and reports connected with interior economy. Promotions. Leave of absence. Transfers. Rewards. Punishments. Recruiting. Landwehr business. Formation and organisation of new levies. Invaliding. Remounts. Military police. Pensions. Supply of ammunition for practice. Armament, &c., &c.

AUTHORITIES OF HIGHER RANK THAN ARMY CORPS COMMANDERS.

(a.) *Army Inspections.*

The German Army is divided into five Army Inspections, to which the troops are detailed as follows:—

- 1st Army Inspection:—1st, 2nd, 9th, and 10th Army Corps.
- 2nd " 5th and 6th Army Corps.
- Attached:—12th (Royal Saxon) Army Corps.
- 3rd Army Inspection:—7th, 8th, and 11th Army Corps.
- 4th " 3rd, 4th, and 13th Army Corps.
- Attached:—1st and 2nd Bavarian Army Corps.
- 5th Army Inspection:—14th and 15th Army Corps.

The Guard Corps is not attached to any Inspection, as the Emperor is its Inspector. These Army Inspections are merely

nominal, and honorary. The following distinguished personages fill the posts of Inspectors-General:—1st Army Inspection, H.R.H. Prince Albert of Prussia; 2nd, H.R.H. Prince George of Saxony; 3rd, H.R.H. the Grand Duke of Hesse; 4th, Field-Marshal von Blumenthal; 5th, H.R.H. the Grand Duke of Baden.

Until H.R.H. Prince Luitpold of Bavaria assumed charge of that Kingdom as Prince Regent, he filled the post of Inspector-General of the Bavarian Army, but since that date no Inspector-General has been appointed. Under the Inspector-General are the Infantry and Cavalry Consultative Committees, but no special composition is laid down for them, and they are only called together when required.

(b.) *Other Authorities.*

The Commander-in-Chief in the Marches.—This office is purely honorary, and was created in 1848, on the occasion of the disturbances in that year. It is held at present by the Commander of the Guard Corps. ("The Marches" (*Die Mark*) comprise most of the Province of Brandenburg, less those portions of the Kingdom of Saxony which were incorporated in it in 1815, and the "Altmark," comprising the districts of Sulz-wedel, Werden, Gardelegen, and Tangermünde, in the Province of Prussian Saxony.)

The Inspector-General of Cavalry.—This office has been vacant since the lamented death of H.R.H. Prince Frederick Charles.

ARMY CORPS, DIVISIONS, AND BRIGADES.

The German Army is divided into 18 Army Corps, each of which comprises two, exceptionally three, Divisions of infantry (each of which generally includes a brigade of cavalry), besides rifles, field and foot artillery, pioneers, railway troops, and train not included in the Divisions. In 3 Army Corps the cavalry are not included in the infantry Divisions, but form separate cavalry Divisions. The Guard Corps has no territorial district assigned to it, but the remaining 17 corps divide amongst themselves the territory of the Empire, as is detailed in Appendix II, and the duties of the Commanders of these Army Corps, besides the actual command of the troops under them, comprise the superintendence of all recruiting operations and mobilisation preparations in their district, and the command of the fortresses.

The Commander of an Army Corps is a General or Lieutenant-General. He superintends the training and discipline of all the troops under his command, except the technical training of the artillery and engineers, which is the business of the Inspectors of those arms. He is responsible that Commanders of all units, from battalions upwards, and all Staff Officers are only retained in their appointments so long as they possess the

requisite physical and mental qualities for the proper performance of their duties, and on his observing any falling off in these respects he has at once to report the matter to Headquarters. Equally he has to report any special qualifications which recommend officers for promotion to higher rank or command. In the event of his absence, the senior Divisional Commander or Commandant of a Fortress takes command of the Corps, but the office duties are carried on as usual by the Chief of the Staff.

The Staff of an Army Corps comprises:—

General Staff:—1 Major-General, Colonel, or Lieutenant-Colonel as Chief of the Staff.

1 Major.

1 Captain (2 in the 15th Army Corps).

Staff Adjutants:—1 Major or Captain of Infantry.

1 Captain or 1st Lieutenant of Cavalry.

1 Corps Intendant. An intendance official of high rank.

5 Intendance officials.

1 Intendance official of the Military Works Department.

1 Corps Judge-Advocate.

1 Surgeon-General (Corps Surgeon).

1 Assistant-Surgeon, secretary to the above.

1 Corps Chaplain (who is also Chaplain of one of the Divisions).

1 Corps Veterinary-Surgeon.

The 15th Army Corps has also a half-pay officer attached to its Staff for special duty; the Guard Corps has a Captain attached for duty connected with its Landwehr formations, with a clerk, as have also the two Bavarian Army Corps.

To each Army Corps Staff are attached two mounted orderlies, an under-officer and a private detached from cavalry regiments, who wear a special uniform, and form a nucleus for the Staff Guards to be formed on mobilisation.

The functions of the General Staff and Adjutants have already been defined. All the officers of those branches work in one office under the Chief of the General Staff, and in that office are also employed 1 secretary (an official) and 5 or 6 clerks (under-officers).

The Intendance Department of an Army Corps is divided into five sections, at the head of each of which is an Intendance official. The duties of these sections are as follows:—

1st Section.—Treasury and general accounts. Administration of troops not included in the Divisions. Intendance affairs connected with marches, transport of troops, military schools, and remount service.

2nd Section.—Provisions and forage. Control of funds for building of fortifications.

3rd Section.—Central clothing depôts. Train material. Verification of accounts of artillery establishments.

4th Section.—Barracks. Barrack furniture. Bedding. Fuel. Lighting. Lodging allowances.

5th Section.—Hospitals. Pensions. Invaliding.

In the five sections are employed 7 to 11 secretaries, 5 to 8 clerks, and a few subordinate employés.

The Corps Intendant, usually a retired officer, is the adviser and administrative organ of the Corps Commander, but at the same time he is the provincial representative of the War Ministry for certain administrative branches not coming within the special jurisdiction of the General. In consequence of this direct responsibility to the War Ministry, he has a certain independence in all administrative matters in those cases where there is no previous decision for his guidance, and, although his instructions are to comply with the General's orders as far as possible, yet, should these demands seem to him contrary to regulation, it is his duty to point out any deviation therefrom. Whatever the General's ultimate decision may be, the Corps Intendant has to comply with it, and report to the War Ministry.

The Intendance officials on the Corps Staff are almost exclusively retired officers.

The Intendance official in charge of the Military Works Department is under the Corps Intendant, and has charge of the technical superintendence of military buildings. He has under him the Garrison Inspectors of Military Buildings.

The 12th (Saxon) Army Corps has no Intendance, the work being performed in the Saxon War Ministry.

The functions of the other members of the Army Corps Staff are sufficiently indicated by their titles.

The normal Army Corps is composed of—

- 2 Divisions, each of 2 infantry and 1 cavalry brigades.
- 1 Battalion of rifles.
- 1 Brigade of field artillery of 2 regiments.
- 1 Regiment of foot artillery.
- 1 Battalion of pioneers.
- 1 Battalion of train.

The above (with the exception of slight variations in the rifles, foot artillery, and pioneers) is the composition of 13 of the 18 Army Corps. The following are exceptions:—

The Guard and 1st Corps have each 2 Divisions of infantry of 2 brigades each, and a Division of cavalry of 3 brigades in the Guard and 2 brigades in the 1st Corps.

The 11th and 12th Corps have each 3 Divisions, each of 2 brigades of infantry and 1 brigade of cavalry. The artillery brigade of the 11th Corps has 3 regiments.

The 15th Corps has 3 Divisions of infantry, one of 3 and two of 2 brigades, and 1 Division of cavalry of 2 brigades.

The total number of Divisions of infantry and cavalry is therefore 42, of which 32 comprise both infantry and cavalry, 7 infantry only, and 3 cavalry only.

The detailed composition of each Army Corps is shown in Appendix I, and the following table gives a summary of the number of units in each:—

COMPOSITION OF GERMAN ARMY CORPS.

Corps.	Headquarters.	Mixed or Infantry Divisions.	Infantry Battalions.	Rifle battalions.	Cavalry Divisions.	Cavalry Squadrons.	Field Artillery.			Battalions Foot Artillery.	Battalions Pioneers.	Battalions Railway Troops.	Battalions Train.
							Field Batteries.	Horse Batteries.	Total horsed gun.				
Guard.	Berlin..	3	27	2	1	40	17	3	80	2	1	4	1
I.	Königsberg...	2	30	1	1	80	17	3	90	2	1	..	1
II.	Stettin	2	32	1	..	80	17	3	86	4	1	..	1
III.	Berlin	2	24	1	..	80	17	3	80	2	1	..	1
IV.	Magdeburg...	2	24	1	..	20	17	3	80	2	1	..	1
V.	Posen..	2	27	1	..	25	17	3	80	2	1	..	1
VI.	Breslau	2	28	1	..	25	17	3	80	2	1	..	1
VII.	Münster	2	28	1	..	20	17	3	80	2	1	..	1
VIII.	Cologne	2	26	..	..	20	17	3	92	2	1	..	1
IX.	Altona	2	24	2	..	20	17	3	80	..	1	..	1
X.	Hanover	2	24	1	..	20	17	3	80	..	1	..	1
XI.	Cassel..	3	38	1	..	80	23	4	110	..	1	..	1
XII.	Dresden	3	33	3	..	30	20	3	94	..	1	..	1
XIII.	Stuttgart	2	21	..	..	20	18	..	84	1	1	..	1
XIV.	Karlsruhe	2	28	..	..	20	17	1	86	1	1	..	1
XV.	Strasbourg	3	48	1	1	40	18	..	96	6	2	1	1
I. Bavarian.	Munich	2	27	2	..	25	17	3	80	2	1	..	1
II. Bavarian.	Würzburg	2	24	2	..	20	17	3	80	1	1	..	1
Total for 18 Army Corps ..		39	513	21	3	465	317	47	1,598	31	19	5	18½

With the exception of the two Guard Infantry and the four Bavarian Divisions, which are numbered in special series, the mixed or infantry Divisions are numbered throughout the Army, from 1 to 33, the 1st and 2nd Divisions forming the 1st, the 3rd and 4th Divisions, the 2nd Army Corps, and so on up to the 10th Army Corps. The 11th Army Corps comprises the 21st, 22nd, and 25th Divisions; the 12th, the 23rd, 24th, and 32nd; the 13th, the 26th and 27th Divisions; the 14th, the 28th, and 29th; and the 15th Army Corps, the 30th, 31st, and 33rd Divisions. The Cavalry Divisions are named the "Guard Cavalry Division" and the "Cavalry Division of the 1st (15th) Army Corps."

A Division is commanded by a Lieutenant-General, who has supreme command over all the troops in his Division. His first care is to look after the practical training of the troops in field duties. He arranges for combined exercises of the various arms, and, as far as possible, instructs the Commanders on the value of concerted action and mutual support in battle. He is under the orders of the Corps Commander, but is empowered to communicate on many points direct with the War Ministry, notifying, however, in all cases, the nature of such business to his immediate chief. He has nothing to do with recruiting business, but superintends the training of the Reserves when called out. One of his principal duties is to preserve a good understanding between the military and civil authorities, so as to facilitate business in which both are concerned.

The staff of a Division consists of:—

- 1 Major or Captain of the General Staff.
- 1 Adjutant (Major or Captain). (2 in the 25th Division).
- 1 Divisional Intendant.
- 2 Divisional Judge-Advocates.
- 1 Divisional Surgeon (who is always also regimental surgeon of one of the regiments of the Division).
- 2 Divisional Chaplains.

Certain Divisions in which the Roman Catholic element is largely represented have also a Divisional Chaplain of that persuasion.

The Cavalry Divisions have only 1 Divisional Judge-Advocate, and no Chaplains or Surgeons.

The Divisions of the 12th Army Corps have no Intendant or Chaplains.

The Divisions of the 13th Army Corps and those of the Bavarian Army have neither Judge-Advocates nor Chaplains.

The functions of the officers of the General Staff and of the Adjutants have been already described. Two clerks (non-commissioned officers) are employed in their combined office. According to the distribution list for 1st October, 1887, of the 43 Adjutants of Divisions, 14 belonged to the infantry, 28 to the cavalry, and 1 to the artillery. One orderly is allowed for the Divisional Commander, detailed from a cavalry regiment.

The duties of the Divisional Intendants comprise all matters

affecting the pay, lodging allowances, and travelling allowances of the troops in the Division, the audit of the accounts, the examination of balances in the hands of the troops, all business connected with the clothing and equipment of the Division, the rationing of recruits, reserves, and remount escorts, and all extraordinary money disbursements. They also attend the musters of the troops. With regard to the local administrations, they have only authority so far as to see that the wants of the troops from the garrison, hospital, commissariat, and forage offices are adequately met. The *personnel* of a Divisional Intendance office numbers from 7 to 9 individuals.

Each Chaplain has a sacristan.

There are in all in the 18 Army Corps, 79 brigades of infantry, 39 brigades of cavalry, and 18 brigades of Field Artillery.

Of the 79 infantry brigades:—

61 have 2 regiments of infantry.

10 have 3 regiments of infantry.

6 have 2 regiments of infantry and 1 battalion of rifles.

*1 has 1 regiment of infantry.

†1 has 1 regiment of infantry and 3 battalions of rifles.

Of the 39 cavalry brigades:—

26 have 2 regiments of cavalry.

11 have 3 regiments of cavalry.

2 have 4 regiments of cavalry.

Of the 18 artillery brigades, one (the 11th) has 3 regiments of field artillery, one (the 13th) 2 regiments of field, and a battalion of garrison artillery, and the remaining 16 have each 2 regiments of field artillery.

The brigades of the Guard and Bavarian Army are numbered in special series (1st to 4th Guard Infantry, 1st to 3rd Guard Cavalry, 1st to 8th Bavarian Infantry, 1st to 4th Bavarian Cavalry, and Bavarian Occupation Brigade in Metz). The others are numbered in series throughout the Army, 1st to 66th Infantry, and 1st to 32nd Cavalry Brigade. They are detailed in regular succession to Divisions (thus the 9th and 10th Infantry Brigades and 5th Cavalry Brigade form the 5th Division, &c.), the exception being only in the case of the 3 Guard Cavalry, and 1st, 2nd, 30th, and 31st Cavalry Brigades, which belong to the three Cavalry Divisions. The Artillery Brigades bear the name or number of their Army Corps.

The Commander of an Infantry Brigade is a Major-General, as a rule; that of a Cavalry or Artillery Brigade is a Major-General or Colonel. The Brigade Commander superintends the tactical training and interior economy of the troops composing his brigade, and is held responsible for its efficiency. Brigadiers of infantry and cavalry are subordinate to their Divisional

* The 54th Brigade (13th Corps), which detaches a regiment to a 3-regiment brigade of the 15th Corps, which regiment would return to it on mobilisation.

† The 64th Brigade (12th Corps). As for the 54th Brigade. On mobilisation the three rifle battalions would be distributed one to each division of the 12th Corps.

Commanders, and those of the Field Artillery are directly under the Corps Commander in all matters connected with discipline, military duties, and administration, and to the Inspectors of Field Artillery in those connected with technical training.

The Infantry Brigade Commanders form very important links in the general organisation of the Army, inasmuch as they are responsible to the Corps Commander for all duties connected with the Landwehr districts, of which they are the heads (see Chapter V). They are further responsible for all details of the mobilisation of the Reserves and Landwehr.

The staff of a brigade of infantry or cavalry consists only of an Adjutant, usually a 1st lieutenant of the same arm. He has a non-commissioned officer as clerk, and one mounted orderly is allowed for the Brigade Commander. Bavarian brigades have also a Brigade Judge-Advocate. For recruiting duties, &c., a varying but small number of clerks (non-commissioned officers) is attached to each Infantry Brigade staff.

The staff of a brigade of Field Artillery consists of a 1st lieutenant as adjutant, an officer of the Corps of Artificers, two or three sergeant-artificers, two clerks (non-commissioned officers) and one mounted orderly.

The detailed distribution of the troops to Brigades, Divisions, and Army Corps is given in Appendix I, and it must be noted that this is the permanent distribution. Changes of garrison are very rare in the German Army, and indeed are incompatible with a system of territorial recruitment and rapid mobilisation. The few changes which have taken place of late years have had as their object to bring back to their own recruiting districts regiments detached to the 14th and 15th Army Corps, to place in the territory of the 15th Army Corps the regiments which properly belong to it, to concentrate on the western and eastern frontiers large bodies of cavalry to cover the mobilisation and concentration of the Army, and finally to unite in the same garrison the battalions, squadrons, or *Abtheilungen* of the same regiment.

STAFFS OF FORTRESSES, TOWNS, AND GARRISONS.

The fortresses of the Empire have their staff permanently appointed in time of peace. The duties of the Governor or Commandant are to superintend garrison duties, to make himself acquainted with the fortress, its surroundings, and resources, and to prepare all details of the defence beforehand. For this purpose he has a staff, the composition of which for each fortress is given in the table on pages 255 to 257.

In open towns, the senior officer of the garrison commands, but in certain large towns enumerated below a special staff is provided to superintend garrison duties, the time of the staff of the troops being fully occupied in supervising the training and administration of the latter.

The artillery dépôts in fortresses are in charge of the 1st Artillery Officer of the fortress. Those in open towns have special chiefs.

No Intendance Staff is attached to fortress commands, the duties being performed in peace by the Intendance of the troops.

The Town-Majors are field officers or captains of infantry or cavalry, and are seconded in their regiments. The artillery officers are majors or captains, and are generally supernumerary in their regiments of Foot Artillery. They have under them a staff of officers and non-commissioned officers of the Ordnance and Artificer Corps. The Engineer Officer of the fortress is generally a major or captain, and has command of the attached Engineer Officers, who all belong to the engineer inspections, as well as of the subordinate engineer staff employed in the fortress.

The Chaplains generally are also Chaplains of Divisions in addition to their garrison duties.

The following table gives the strength of each garrison or fortress staff. Where no Commandant is shown, the senior Officer of the place commands in addition to his other duties. Each fortress is under the Commander of the Army Corps in whose territory it is situated. Ulm is an Imperial fortress, and its staff is composed of officers and officials of the Prussian, Württemberg, and Bavarian Armies. The works on the left bank of the Danube are in Württemberg territory, and are garrisoned by troops of that army, while the Bavarians have those on the right bank (Neu-Ulm). There is a Town-Major for each bank.

STAFFS OF FORTRESSES AND GARRISONS.

Fortress or Town.	Governor (General Officer).	Commandant.		General Staff Officer.	Adjutants to Governor.	Adjutant to Commandant.	Town Major.	1st Artillery Officer of the Fortress.	2nd Artillery Officer of the Fortress.	Engineer Officer of the Fortress.	Engineer Officers for Duty.	Fortress Judge-Advocates.	Garrison Surgeons.	Garrison Chaplains.
		General Officer.	Field Officer.											
Altona ..	1	1	..	1	1	..	1	1	1	1	12	1	1	..
Berlin ..	1	1	..	1	1	..	1	1	1	1	1	1	1	..
Bozen (Fort)	1	..	..	..	1	..	..	..	..	..	..	..	..
Breslau (Neu)	1	..	..	..	1	1	1	1	2	1	1	..
Breslau	1	..	..	..	..	1	1	1	1	1	1	1	..
Coblenz and Ehrenbreitstein ..	1	1	1	1	1	..	1	1	1	1	17	1	1	..
Cologne	1	1	..	..	..	1	1	1	1	1	1	1	..
Colberg	1	..	..	..	..	1	1	1	1	1	1	1	..
Cüstrin	1	..	..	..	1	1	1	1	1	1	1	..
Cuxhaven	1	..	..	..	..	1	1	1	1	1	1	1	..
Hanitz	1	..	..	..	..	1	1	1	1	1	1	1	..
Darmstadt	1	..	..	..	..	1	1	1	1	1	1	1	..
Diedenhofen	1	..	..	..	..	1	1	1	1	1	1	1	..
Frankfurt-on-the-Maine	1	..	..	..	..	1	1	1	1	1	1	1	..
Göstemünde	1	..	..	..	..	1	1	1	1	1	1	1	..
Glatz	1	..	..	..	..	1	1	1	1	1	1	1	..
Glogau	1	1	..	..	..	1	1	1	1	1	1	1	..
Hanover	1	..	..	..	..	1	1	1	1	1	1	1	..
Karlsruhe	1	..	..	..	..	1	1	1	1	1	1	1	..
Königsberg	1	..	..	..	..	1	1	1	1	1	1	1	..
Magdeburg ..	1	1	..	1	1	..	1	1	1	1	1	1	1	..
Mainz	1	..	..	..	..	1	1	1	1	1	1	1	..
Metz	1	1	1	1	..	1	1	1	1	1	1	1	..

STAFF OF FORTRESSES AND GARRISONS—continued.

Fortress or Town.	Governor (General Officer).	Commandant.		General Staff Officer.	Adjutant to Governor.	Adjutant to Commandant.	Town Majors.	1st Artillery Officer of the Fortress.	2nd Artillery Officer of the Fortress.	Engineer Officer of the Fortress.	Engineer Officers for Duty.	Fortress Judge-Advocates.	Garrison Surgeons.	Garrison Chaplains.
		General Officer.	Field Officer.											
Neisse	1	..	..	..	1	1	1	1	1	1	1	1
Pillau	1	..	..	1	1	1	1	1	1	1	1	1
Posen..	..	1	..	1	..	..	1	1	1	1	10	1	1	1
Potsdam	1	1	..	..	..	1	1	1	1	8	1	1	1
Potsdamm	1	1	..	..	..	1	1	1	1	10	1	1	1
Rastatt	1	1	..	..	..	1	1	1	1	8	1	1	1
Saarbrücken	1	1	..	..	..	1	1	1	1	8	1	1	1
Sonderburg-Düppel	1	1	..	..	..	1	1	1	1	8	1	1	1
Spandau	1	1	..	..	..	1	1	1	1	8	1	1	1
Stettin	1	1	..	..	..	1	1	1	1	8	1	1	1
Stralsund	1	1	..	..	..	1	1	1	1	8	1	1	1
Strasbourg ..	1	..	1	1	1	1	1	1	1	1	13	1	1	1
Swinemünde..	1	..	..	..	1	1	1	1	12	1	1	1
Thorn	1	..	..	..	1	1	1	1	12	1	1	1
Torgau	1	..	..	1	1	1	1	1	12	1	1	1
Weesl	1	1	..	..	..	1	1	1	1	12	1	1	1
Dresden	1	1	..	..	..	1	1	1	1	12	1	1	1
Königsberg ..	1	1	1	..	1	1	1	1	1	1	12	1	1	1
Ulm	1	1	..	1	1	1	1	1	1	12	1	1	1
Stuttgart	1	1	..	1	1	1	1	1	1	12	1	1	1
Ludwigsburg	1	1	..	1	1	1	1	1	1	12	1	1	1
Augsburg	1	1	..	1	1	1	1	1	1	12	1	1	1
Germerheim	1	1	..	1	1	1	1	1	1	12	1	1	1
Ingolstadt ..	1	1	1	..	1	1	1	1	1	1	12	1	1	1

STAFFS OF FORTRESSES AND GARRISONS—continued.

Fortress or Town.	Commandant.		Governor (General Officer).	Adjutant to Governor.	Adjutant to Commandant.	Town Major.	1st Artillery Officer of the Fortress.	2nd Artillery Officer of the Fortress.	Engineer Officer of the Fortress.	Engineer Officers for Duty.	Fortress Judge-Advocate.	Garrison Surgeons.	Garrison Chaplains.
	General Officer.	Field Officer.											
Munich	1	..	..	..	1	1 1 1	..	..	..	..	1 1 1	1 1 8	..
Nürnberg
Würzburg
Cassel	1	..	..	..	..	..	..	..
Friedrichsart
Grandenz
Minden
Münster
Rendsburg
Wilhelmsbaven
Bamberg
Lechfeld Camp
Landau
Regensburg

Garrison Towns.

INSPECTIONS OF SPECIAL ARMS AND SERVICES.

(a.) *Field Artillery (Prussia).*

At the head of the Field Artillery in Prussia is the Inspector-General of Field Artillery. He is a general officer, at present General von Voigts-Rhetz, and his duties are to conduct all business connected with the duties and *personnel* of the Field Artillery, and to watch over the particular training and preparedness for war of the arm. He has to inspect each unit once in two years during its period of practice. He is a member of the Defence Committee, and, if senior to the Inspector-General of Foot Artillery, President of the General Artillery Committee, and is co-President of the Artillery and Engineer School. He is directly subordinate in matters concerning his arm to the Emperor, and has to submit his inspection reports to him. He has the disciplinary powers and powers of giving leave of a Corps Commander.

The Staff of the Inspector-General of Field Artillery consists of 1 Chief of the General Staff, a field officer of that branch who has formerly served in the field artillery, and 4 adjutants, (at present 2 majors and 2 captains, seconded from field artillery regiments), with the necessary non-commissioned officers as clerks.

Directly under the Inspector-General of Field Artillery are the four Inspections of Field Artillery, at the head of each of which is a general officer (3 lieutenants-general, 1 major-general) who has a 1st lieutenant as adjutant. These Inspections comprise :—

1st Field Artillery Inspection (Posen) :—	1st, 5th, and 6th Field Artillery Brigades.
2nd " " (Berlin) :—	Guard, 2nd, 8rd, and 4th Field Artillery Brigades.
3rd " " (Hanover) :—	9th, 10th, and 11th Field Artillery Brigades.
4th " " (Coblenz) :—	7th, 8th, 14th, and 15th Field Artillery Brigades.

The Inspectors of these Inspections have the right of inspecting the brigades under their command once a year, and are responsible for their technical training. They have the disciplinary, &c., powers of divisional commanders.

The Committee of Examinations for Captains and 1st Lieutenants of Field Artillery, the Practice Ranges as far as does not concern their administration by local authorities, and the School of Gunnery, as far as concerns Field Artillery matters, are also under the Inspector-General of Field Artillery.

(b.) *Foot Artillery (Prussia).*

At the head of the Foot Artillery is the Inspector-General of Foot Artillery, at present Lieutenant-General von Roerdansz. He conducts all affairs connected with the duties and *personnel* of

the Foot Artillery and its military and technical training, and is consulted on all matters concerning fortresses which concern the Artillery. He has further charge of the affairs of the *personnel* of the Artillery Dépôt Inspections and Corps of Artificers, but has to consult the War Ministry before making proposals for promotions, &c., in those departments. He has to inspect all units of the Foot Artillery once a year, at practice and at the arming exercises in alternate years. He is a member of the Defence Committee and President of the General Artillery Committee if senior to the Inspector-General of Field Artillery, and co-President of the Artillery and Engineer School. He reports to the Emperor in the same manner as the Inspector-General of Field Artillery, and has the disciplinary, &c., powers of a Corps Commander.

The Staff of the Inspector-General of Foot Artillery consists of a Chief of the General Staff, a field officer of that branch who has served in the foot artillery, and 4 adjutants (at present 1 major and 3 captains seconded from the foot artillery), with the necessary clerks.

Under the Inspector-General of Foot Artillery are four Foot Artillery Inspections, composed as follows :—

1st	Foot Artillery Inspection (Berlin)	—Guard, 5th and 6th Foot Artillery Regiments.
2nd	„ „ „	1st, 2nd, and 11th Foot Artillery Regiments.
3rd	„ „ (Mainz)	—3rd, 4th, and 7th Foot Artillery Regiments, and 9th Foot Artillery Battalion.
4th	„ „ (Metz)	—8th, 10th, and 12th Foot Artillery Regiments, and 14th Foot Artillery Battalion. Attached, Staff and 1st. Battalion 2nd Bavarian Foot Artillery Regiment.

Each of these Inspections has at its head a major-general, who has a captain or 1st lieutenant seconded from the foot artillery as his adjutant. These officers have the same duties as the Field Artillery Inspectors.

Under the Inspector-General of Foot Artillery are also the Artificers' School, the Committee of Examinations for Captains and 1st Lieutenants of Foot Artillery, the practice ranges devoted to Foot Artillery practice only, and the School of Gunnery.

(c.) *Inspections of Artillery and Train in States other than Prussia.*

In Saxony and Württemberg the Commander of the Artillery Brigade of the Army Corps is the inspector of his brigade, and also of the Train Battalions attached to his Army Corps.

In Bavaria there is a special Inspector of Artillery and Train, a lieutenant-general, who has under him the two brigades of Field Artillery, the brigade of Foot Artillery, the two

Train Battalions, the Artillery Technical Establishments, the Small-Arms Factories, and the Artificers' School. He has a staff of three general officers or colonels, chiefs of the sections for artillery, train, and artillery depôts respectively, two adjutants (captains of field artillery), 7 majors and captains of artillery and train employed in the sections, 2 officers of the Ordnance Corps, and 1 officer of the Corps of Artificers, besides clerks, &c.

The Foot Artillery Brigade has a special staff of 1 Colonel commanding, with an Adjutant.

(d.) Bavarian Cavalry Inspection.

At the head of the Bavarian Cavalry is an Inspector, a lieutenant-general, who is directly under the War Ministry, and who is also President of the Cavalry Consultative Committee. His principal duties are the inspection of the cavalry regiments and the superintendence of their tactical and technical training. The inspection reports of the Cavalry Brigade Commanders are forwarded to him, and he forwards them with his remarks to the Divisional Commanders. The same procedure is followed with regard to qualification reports on officers. He also acts as Inspector of Remounts for all mounted arms, and superintends the Military Riding Establishment and the Farriers' School. His staff consists of a 1st lieutenant as adjutant and two veterinary surgeons, one the chief of the Farriers' School, the other belonging to a cavalry regiment, as consulting veterinary surgeons.

(e.) Inspections of Artillery Depôts (Prussia).

The organisation of the Artillery Depôts and their division into four Inspections is described in Chapter VI, Part II. At the head of each of them is a Colonel or Lieutenant-Colonel, who has a staff of 2 officers of the Ordnance Corps and 1 officer of the Corps of Artificers, besides the necessary clerks. Each Inspection is placed under the Foot Artillery Inspection with the corresponding number. The duties of the Artillery Depôt Inspectors are to ensure the proper preparation of the armament of the fortresses, and to superintend the administration of and inspect the material in the depôts.

(f.) Inspections of Engineers (Prussia).

At the head of the Engineers and Pioneers in Prussia is the Inspector-General of Engineers, Pioneers, and Fortresses, at present General von Stiehle, who has a chief of the staff and four adjutants. He has the same functions to fulfil as regards the Engineers and Pioneers as the Inspectors-General of Field and Foot Artillery have as regards their own arms, the Pioneer Battalions being only under the Army Corps Commanders for administration and discipline. The Inspector-General has also

charge of the military telegraph service. The Railway Regiment is not under the Inspector-General of Engineers, but under the chief of the General Staff, who has the same duties with regard to it as the Inspector-General has concerning the Pioneer Battalions. The Inspector-General of Engineers is also a member of the Defence Committee and a curator of the Artillery and Engineer School. In his office are employed a secretary and 6 clerks (non-commissioned officers).

Under the Inspector-General are the four Engineer and the two Pioneer Inspections. To each of the Engineer Inspections is attached the body of engineer officers bearing its number as detailed in Chapter XV. At the head of each is a general officer or colonel who has two adjutants (captains or 1st lieutenants). Under these again are the Fortress Inspections, the detail of which is as follows :—

1st Engineer Inspection (Berlin) :—			1st Fortress Inspection, Königsberg.		
			2nd	"	"
			8th	"	"
2nd	"	"	3rd	"	"
			4th	"	"
			9th	"	"
3rd	"	(Strassburg) :—	6th	"	"
			10th	"	"
4th	"	(Mainz) :—	5th	"	"
			7th	"	"
					Danzig.
					Kiel.
					Posen.
					Berlin.
					Thorn.
					Metz.
					Strassburg.
					Mainz.
					Cologne.

At the head of each Fortress Inspection is a colonel or lieutenant-colonel of the corresponding Engineer Inspection, who has a 1st lieutenant as adjutant. The detail of the fortresses comprised in each Fortress Inspection is given in Chapter IX, Part II.

The two Pioneer Inspections are in charge of colonels, each of whom has two lieutenants as adjutants. The Inspections comprise :—

1st Pioneer Inspection (Berlin) :—Guard, 1st, 2nd, 3rd, 4th, 5th, 6th, and			9th Pioneer Battalions.		
2nd	"	(Mainz) :—	7th, 8th, 10th, 11th, 14th, 15th, and	16th Pioneer Battalions.	

Each Inspector is bound to inspect all his battalions once in two years.

To the Inspector-General of Engineers are also subordinated the Engineer Committee, the School of Fortification Construction, the Engineer Examination Committee, the School of Military Telegraphy, and the Inspector of Military Telegraphy. The latter is a lieutenant-colonel who has two officers attached to his staff for duty, and a lieutenant as adjutant. He has charge of the construction and repair of all telegraphic apparatus in the War Ministry, the fortresses, the garrison towns, the practice ranges, and the coast defences, studies the organisation of the military telegraph service in foreign countries, and superintends the instruction of all ranks destined to form the military telegraph detachments on mobilisation. He has also charge of the carrier-pigeon service.

(g.) Inspections of Engineers in Bavaria, Saxony, and Württemberg.

At the head of the Bavarian Engineers is the Inspector-General of Engineers, a general officer whose duties are the same as those of the corresponding officer in Prussia, and who besides superintends the training of the Railway Battalion. He has two adjutants, and his staff is divided into two sections, one for pioneers and railway troops, the other for fortresses, in which are employed 2 field officers as chiefs, 3 engineer officers, an engineer official, and 7 clerks, &c.

In Saxony and Württemberg, the Pioneer Battalions are under the Commanders of the Artillery Brigades for inspection purposes.

(h.) Inspections of Landwehr.

In the 1st, 2nd, and 3rd Army Corps districts there are three "Inspections of Landwehr," at the head of each of which is a major-general who has an adjutant, and, in the 3rd Landwehr District, a half-pay officer as assistant also. Under these inspections are placed Landwehr Battalion Districts as follows:—

1st Landwehr Inspection (under 1st Division, 1st Army Corps) (Königsberg).	Tilsit Landwehr Battalion District.
	Wehlau " " "
	Königsberg " " "
	Lützen " " "
	Goldap " " "
2nd Landwehr Inspection (under 4th Division 2nd Army Corps) (Bromberg).	Inowrazlaw Landwehr Battalion District.
	Bromberg " " "
	Thorn " " "
	Stargardt " " "
3rd Landwehr Inspection (under 6th Division 3rd Army Corps) (Berlin).	1st Berlin Landwehr Regimental District.
	2nd Berlin Landwehr Regimental District.
	Teltow Landwehr Battalion District.

The duties and destination on mobilisation of these Inspectors are nowhere clearly laid down. They take the place of the Brigade-Commanders (see Chapter V) with regard to the Landwehr Battalion Districts under their command, and, as it is directed that they shall take part in the annual manœuvres, it appears probable that in war they will take command of the Reserve Divisions to be formed by their respective Army Corps. Similar Inspections will probably be formed in the other Army Corps as funds become available.

(i.) Inspectors-General of Military Education.

In Prussia, the Inspector-General of Military Education is a general officer, who has the general superintendence of all military educational establishments, and addresses his reports direct to the Emperor, corresponding also with the War

Ministry on administrative matters. The Saxon establishments are under him, as are also the Chief Committee of Military Studies, the Chief Committee of Military Examinations, the Inspector of War Schools, and the Cadet Corps. His staff consists of 2 adjutants and 3 civil employés.

In Bavaria, the Chief of the General Staff is also Inspector of Military Education, and has for this special duty a staff of an adjutant, a half-pay officer as librarian, and a surgeon. Under his orders are the Chief Committee of Military Studies and Examinations, the War Academy at Munich, the Artillery and Engineer School, the War School, and the Cadet School.

(k.) Inspection of Rifles and Sharpshooters.

The Inspector of Rifles and Sharpshooters is a major-general, who has a staff of an adjutant and an officer attached for duty. He has charge of all battalions of the arm in the same manner as the Inspector-General of Field Artillery has charge of his arm, the rifles being only under the Corps Commanders for tactical training and discipline. He conducts the promotion and transfer of officers, the musketry and field-service training of the battalions, the training of the reserve and Landwehr rifles, the filling up of the reserve of the rifles, and all matters connected with the relations between the rifle battalions and the Forest Department. The 108th Regiment, which bears the name of Sharpshooters, is not in any way specially recruited, and, in common with the Saxon and Bavarian Rifles, it is not under the Inspector of Rifles. Württemberg has no troops of this arm.

(l.) Inspector of Infantry Schools (Prussia).

The Inspector of Infantry Schools in Prussia is a major-general, who has the superintendence of the Under-Officers' Schools, the Under-Officers' Preparatory Schools, the School for Soldiers' Children at Annaburg, the Military Gymnastic School, and the School of Musketry. He has an adjutant as staff officer, and is directly under the War Ministry.

(m.) Inspector of Train (Prussia).

The Inspector of Train in Prussia is a major-general, who is directly under the War Ministry, and has the rank of a brigade commander. He has two adjutants and a dépôt officer on his staff, and has the same functions as regards the train battalions as the Inspector of Rifles has as regards the rifle battalions.

(n.) Inspector of War Schools (Prussia).

The Inspector of War Schools is under the Inspector-General of Military Education. He is a general officer with the

rank of brigade commander, has an adjutant, and superintends the duties, instruction, and discipline at the Prussian War Schools. He is also President of the Committee of Studies at these schools, which has four field officers, all holding other appointments, as members.

(o.) *Inspector of the Veterinary Department (Prussia).*

The Inspector of this Department is a general officer of cavalry who has an adjutant and two consulting veterinary surgeons, and who is directly under the War Ministry. The Veterinary and Farrier Schools are in his charge.

In Bavaria the duties are performed by the Inspector of Cavalry.

(p.) *Inspectors of Military Prisons.*

The Inspector of Military Prisons in Prussia is a field officer, who has an adjutant, and who is directly under the War Ministry. He has under him the 11 military prisons and 3 disciplinary divisions.

The same functions are fulfilled in Bavaria by a field officer, who has a judge-advocate (who is also a brigade-judge-advocate) to assist him.

(q.) *Inspector of Small-Arm Factories.*

This office is held by a field officer, who has an adjutant and one officer attached for duty as his staff.

VARIOUS COMMITTEES, &c.

(a.) *Defence Committee.*

This Committee sits at Berlin, and only meets by order of the Emperor, to whom it reports direct. The questions to be decided upon by it refer to the general defence and military organization of the country. It is presided over by H.I.H. the Crown Prince, and its members are (according to the 1887 Army List), the Chief of the General Staff of the Army with the Quartermaster-General as his substitute, the Generals commanding the Guard and 3rd Army Corps, the Inspectors-General of Field Artillery, Foot Artillery, and Engineers, the Chief of the Admiralty, and the Director of the General War Department of the War Ministry, representing the War Minister.

(b.) *The General Artillery Committee.*

The General Artillery Committee is an assembly of generals and field officers of Artillery, called together from time to time at Berlin to consider important questions concerning the regula-

tions, organisation, armament, and equipment of the Artillery, and the best methods of utilising the results of scientific discoveries. It is divided into two sections, the first of which, under the presidency of the Inspector-General of Field Artillery, considers questions relating to that arm; the second, under the Inspector-General of Foot Artillery, considers questions concerning the Foot Artillery. The members are:—In the 1st section only, all Generals of Field Artillery at Berlin and the Chief of the General Staff of the Field Artillery; in the 2nd section only, all Generals of the Foot Artillery at Berlin and the Chief of the General Staff of the Foot Artillery. To both sections belong the President of the Artillery Experimental Committee, the Chief of the Artillery and Technical Sections of the War Ministry, the Inspector of Artillery Material, and the Director of the School of Gunnery. The Inspectors-General may refer any question concerning their own arm to the section under them, and may call on the members of the Artillery Experimental Committee concerned, and the Directors of the Artillery establishments in Spandau, for their opinions. The Emperor alone can summon both sections to consult together.

(c) *Artillery Experimental Committee.*

The object of this committee is to examine and experiment on all inventions connected with land and naval Artillery. It is presided over by a major-general, who has an adjutant, a 1st lieutenant of Foot Artillery.

It is divided into two sections, one entrusted with matters concerning Field Artillery, the other with those relating to Siege, Garrison, and Coast Artillery. Each section is in charge of a colonel of the arm, who has the rank of a regimental commander, and the members of both comprise 2 field officers and 5 captains. As supernumerary members, a colonel of Foot Artillery at the disposal of the General War Department of the War Ministry is attached. Two naval officers and a captain of Foot Artillery are attached for duty, and the chiefs of the Powder Mill at Spandau, Gun Foundry, Artillery Repairing Workshop at Spandau, and Laboratory are *ex officio* members. Two lieutenants on the establishment and one attached act as assistants.

The actual experiments are carried out under the chief of the second section, who has five lieutenants as assistant experimental officers. The experimental company attached to the Committee has 1 captain, 1 1st lieutenant, 2 2nd lieutenants, 1 assistant-surgeon, and 123 non-commissioned officers and men, the latter chosen from men of the Foot Artillery with over one year's service. A naval detachment under an officer is also attached.

The Committee sits at Berlin, and its material is managed as an artillery dépôt, of which one of the members is chief. A

captain and a lieutenant of the Ordnance Corps and two lieutenant-artificers are attached to this depôt.

(d.) *Artillery Examination Committees.*

There is one of these committees for each arm, and before it 1st lieutenants undergo their practical and 2nd class captains their theoretical examinations for promotion. Each consists of the Inspector of the Inspection of the arm stationed at Berlin, and four officers of the arm, all of whom fulfil other duties.

(e.) *Engineer Committee.*

This Committee, which sits at Berlin, prepares or revises projects for fortifications, draws up regulations for and settles the equipment of the pioneers, and studies all technical questions relating to the arm. It is composed of a general officer as president, who has an adjutant, and is divided into two sections, one for questions relating to the troops, the other for those relative to the fortresses. The heads of these sections are field officers, and as members are attached 10 Engineer officers detailed from the Engineer Inspections.

(f.) *Engineer Examination Committee.*

Before this Committee all Pioneer and Engineer captains of the 2nd class must pass an examination before promotion to the 1st class. It is composed of a colonel as president and 8 field officers and 2 captains as members, all of whom hold other appointments at Berlin, where the Committee assembles when required.

(g.) *Small-Arms Experimental Committee.*

The President of this Committee, which sits at Spandau, is a field officer, who has an adjutant. There are seven ordinary members, all infantry officers, and four *ex officio* members as in the Artillery Experimental Committee. Six infantry lieutenants act as assistant experimental officers. The Committee is directly under the War Ministry.

(h.) *Chief Committee of Military Studies.*

This Committee, which sits at Berlin, and is under the Inspector-General of Military Education, is composed of 6 general and 7 field officers chosen from all branches of the service. Its duty is to superintend the organisation, plan of studies, and methods of instruction of all the schools in Prussia for the education of officers, with the exception of the War Academy.

(i.) Chief Committee of Military Examinations.

The President of this Committee is a general officer, who is under the Inspector-General of Military Education in Prussia. Under him are 6 military examiners, 4 of whom belong to the auxiliary cadre of the Great General Staff, 3 civil examiners, and 2 inspectors, one of whom is also chief of the office. The duties of the Committee are to conduct the examinations of candidates for the rank of ensign and of ensigns for commissions. The civil examiners are usually employed for the former examinations, the military for the latter.

(k.) Bavarian Chief Committee of Studies and Examinations.

In Bavaria, a Committee sits at Munich, which combines the duties of both the above. It is composed of the Inspector of Military Education as president, and, as members, the directors of the War Academy, Artillery and Engineer School, and War School, the Commandant of the Cadet Corps, and 4 field officers holding other appointments.

(l.) Committee of Examination for Medical Officers.

This Committee, which sits at Berlin, conducts, as its name implies, the examinations of medical officers, and is composed of the Surgeon-General of the Army as president, and 10 Prussian, 1 Bavarian, and 1 naval medical officers as members.

CHAPTER XIX.

HORSES.

A. REMOUNTS AND CASTING OF HORSES.

THE general system of remounting in Germany is that young horses are bought at from 3 to 3½ years old by seven committees* which travel once a year over certain districts assigned to them. The date at which purchases will be made at each market are announced beforehand, so that proprietors may have notice in time. The young horses thus bought are taken by detachments of the nearest mounted regiments to the remount dépôt of the district, and there take the place of the animals sent as remounts to the regiments. The number purchased always exceeds the requirements by 5 per cent. to make allow-

* One for Bavaria.

ance for losses. The 14 remount dépôts in Prussia supply the Prussian and Württemberg contingents, the 4 in Bavaria supply the army of that state only, and for the Saxon Army remounts are bought either in the country or in Prussia and sent direct to the regiments. Thus the whole Army is remounted exclusively on horses purchased in the country.

(a.) *Remount Dépôts.*

The 14 remount dépôts in Prussia are established at the following places:—

- Province of East Prussia: Jurgaitschen (912).
 Neuhof-Ragnit (650).
 Kattenau (650).
 Brakupönen (470).
 Preussisch Mark (360).
 Sperling (450).
 Liesken (500).
 Province of Brandenburg: Bärenklau (520).
 Province of Pomerania: Neuhof-Treptow (600).
 Ferdinandshof (370).
 Province of Posen: Wirsitz (600).
 Province of Silesia: Wehrse (340).
 Province of Saxony: Arendsee (400).
 Province of Hanover: Hunnesrück (450).

The figures in brackets after each name show the number of horses to be furnished by each dépôt, according to the budget for 1886-87, the total of all 14 amounting to 7,272.

At the head of each dépôt is a civil official as "Administrator" who must be at the same time a good judge of a horse, a good horse-master, and a good agriculturist. He has to deposit caution money, and has entire general charge of the dépôt. Under him is an accountant, and at the head of each of the farms (1 to 4) into which the dépôt is divided is an inspector. One to three veterinary surgeons are attached to each dépôt according to its importance, and to each farm or group of stables is a "forage-master" (*Futtermeister*) who superintends the grooms, the number of whom is calculated at 1 to 20 horses. With the exception of the grooms, who are hired civilians, and the administrators, all the *personnel* are old soldiers who have left the service with the certificate for civil employment. The total *personnel* of the dépôts amounts to 14 administrators, 13 accountants, 30 inspectors, 25 veterinary surgeons, and 40 forage-masters, besides grooms and labourers hired for agricultural work.

The remounts arrive at the dépôts as three-year-olds and remain there one or two years, the objects being to accustom them to a regular diet, to allow them to move about at liberty so as to let them attain their full development, to give weak horses a chance of regaining strength, and to enable worthless horses to

be weeded out. The horses have full liberty at all times to move in and out of their stables into the paddocks attached, and their daily ration is 6 lbs. 9 oz. of oats, 10 lbs. 15 oz. hay, and 13 lbs. 2 oz. straw. For three or four months of the year they are put on green food, but the transition to and from this diet is gradual.

The young horses arrive at the dépôts from the middle of May to the middle of September, and the remounts leave for their regiments about the 1st July.

A certain amount of agriculture and cattle breeding is carried on in the dépôts, and the revenue thus gained is set off against their cost. The average yearly cost of maintenance of a horse is about 13*l.*, including all expenses for pay of establishments, &c., but this varies greatly according to the situation of the dépôt, those in East Prussia being much the least expensive.

The stables are mere closed sheds, and the horses are never tied up in them. The horses are neither shod nor marked, but each has a collar with a ticket attached, on which his number is stamped. Thanks to the extreme docility of the Prussian horses, but little difficulty is experienced in looking after the animals, and ten minutes' grooming is generally all they get.

Thus the Prussian remount dépôts are a most important institution for the well-being and preparation for war of the cavalry, for, thanks to their existence, horses can be bought when young and cheap, and still delivered to the regiments only when they are in every way fit to be placed in the ranks as far as physical strength is concerned.

In Bavaria the same system of remount dépôts has been adopted as in Prussia, and the country possesses four as follows:—

Schwaiganger (208).
Benediktheuern (208).
Fürstenfeld (282).
Schleissheim (170).

with a total of 868 horses and a *personnel* of 4 administrators, 7 accountants, 4 veterinary surgeons, and 7 forage-masters, besides grooms, &c.

(b.) *Purchase of Horses.*

The remount service in Prussia is under a special department of the War Ministry, at the head of which is the Inspector-General of Remount Operations, at present a major-general, who is assisted by a cavalry officer as adjutant and an official. The country is divided into six circles, the first two of which are in East and West Prussia, the great horse-breeding countries of the kingdom, and the remainder dividing the rest of the territory among them. To each circle correspond a certain number (from 2 to 4) of remount dépôts, and for each circle a Remount Committee is formed, the president of which (of rank varying from captain to colonel) alone is permanent, the mem-

bers, two lieutenants and a veterinary surgeon, being detailed from the regiments in the region in which purchases are being made. It may be noted that the presidents are seldom changed, the six officers* shown in the 1887 Army List having held their appointments since 1871, 1872, 1874, 1879, 1879, and 1880 respectively.

Due notice having been given of the places at which remount-markets will be held, the Committees begin their purchasing tours in May, and continue on tour till September, buying by direct purchase three to four-year olds at each place. The animals purchased are then sent in small parties in charge of non-commissioned officers and men detailed from the nearest cavalry regiments to the corresponding remount dépôt, each horse being given a number to which corresponds his description in a roll in which are noted the place and date of purchase, the name of the seller, and the arm of the service for which the animal is provisionally intended.

The Inspector-General visits the dépôts twice a year; in autumn, after the purchasing operations are terminated, and in spring, to definitely class the horses by arms and detail the lots for each regiment. Each year he works out a "remounting plan" showing when and whence each regiment is to fetch its remounts, the routes to be taken, and the strength of the detachments.

A few figures from the Remount Returns of 1882 may be of interest. In that year the six Committees examined 17,508 horses. Of these, 7,912 were considered fit for Army remounts but only 7,054 were purchased, the remainder being rejected on account of defects, or of the price asked being too high. The prices varied from 15*l.* to 70*l.*, the average being about 34*l.* Of the horses bought, 441 were five years old and 6,613 three to four years. 4,642 were bought in East Prussia, the great horse-breeding province of Prussia. In Hanover, which also has a numerous and excellent breed of horses, the prices are now so high as to almost exclude the horses of that province from the Army market.

Bavaria has also her own Purchasing Committee, which in 1882 purchased 949 horses, of which 181, being five years old, were sent direct to regiments of artillery and the riding establishment. Most of these were bought in East Prussia.

In Saxony, remounts are furnished direct to regiments by contractors, and most of those also are bought in East Prussia. The Württemberg troops are remounted from the Prussian dépôts, and that State pays for the keep of the remounts required for her mounted troops.

(c.) *Despatch of Remounts to the Regiments.*

Each year every regiment receives a fixed number of horses of the same age, and casts an equal number, a system which is

* Reduced to four by the budget for 1888-89.

only possible when the effectives are fixed and invariable. Each has besides a "Remount Fund" from which it purchases horses to replace those lost at other times of the year, and any young horse which apparently will never make a good troop-horse may also be sold. In addition to the effective establishment, each squadron or horse artillery battery has 4, each field battery 3, and each train company 5 extra horses (termed *Krümpfer-Pferde*) for which no rations are allowed, which are selected from the best of those cast each year, and which are used as draught-horses for fatigues or as mounts for veterinary surgeons, farriers, &c.

Each cavalry regiment receives annually 63 remounts (the Gardes du Corps 64), the riding establishment 45, and field artillery regiments from 41 (for the 25th Regiment) to 65 horses according to the strength of the regiment. The minimum height for horses for the various arms is as follows:—

Gardes du Corps Regiment..	..	..	16 hands	0·72 in.
Guard Cuirassiers ..	..	..	15	" 3·64 "
Line Cuirassiers ..	..	..	15	" 2·77 "
Lancers ..	..	..	15	" 1·69 "
Light Guard Cavalry ..	..	..	15	" 1·69 "
Dragoons and Hussars of the Line..	..	..	14	" 3·65 "
Artillery wheel horses ..	..	..	16	" 0·72 "
Artillery lead and centre horses ..	..	..	15	" 2·77 "
Artillery riding horses ..	..	..	15	" 0·43 "
Train riding horses ..	..	..	15	" 0·43 "

If for any special reason, such as for remounts for officers, the standard bearer, or the kettle drummer, specially selected horses are required, or if for any reason more remounts than the regulation number are necessary, application is made to the War Ministry.

According to the "remounting plan," each regiment sends a detachment of the required strength to the dépôt detailed to supply it on the fixed date, under an officer, with a proportion of non-commissioned officers, and these bring the remounts to the regiment by short marches, not exceeding 10 miles a day, or by rail. A veterinary surgeon accompanies each detachment. The horses are not shod until their arrival at the regiment, and on the march they receive from 8 lbs. 12 oz. to 9 lbs. 14 oz. of oats (according to the arm), 7 lbs. 10½ oz. hay, and 3 lbs. 13¼ oz. straw. Three remounts are led by one trooper mounted on an old horse. The usual date for the arrival of the remounts is about the beginning of August, and, as the old horses are not cast till after the manœuvres at the end of September, for seven or eight weeks the establishment of horses of a mounted regiment is much exceeded. It is allowed, however, to sell a few of the worst animals after the remounts arrive. On arrival at the regiment, remounts are 4½ to 5 years old, but their breaking does not begin till the 1st October. (See Chapter X, Part II.)

(d.) Officers' Chargers.

In principle, all officers, medical officers, and officials with the rank of officer have to mount themselves at their own

expense and keep up the number of horses for which they draw forage, but lieutenants of cavalry and horse artillery receive a charger (*Chargen-Pferd*) from the State once in five years, while mounted lieutenants of infantry, foot artillery, and train* draw an allowance calculated to enable them to buy a horse every five years. Lieutenants of field artillery ride battery horses. In each cavalry regiment or horse artillery *Abtheilung* there is a Committee, composed of the staff field officer, a captain, a lieutenant, and a veterinary surgeon, for the purpose of selecting officers' chargers from the ranks, but these may not be taken until they have served two years in the ranks, and they are therefore seven years old before they become chargers. After an officer has had such a horse for five years it becomes his own property, and, under certain restrictions, he may sell it. A lieutenant may also be permitted, for one year at the outside, to ride a troop horse if a satisfactory charger cannot be assigned to him, and in this case he draws an allowance of 11s. a month, which is a sixtieth part of the price fixed for an officer's horse, viz., 660 marks, or 33*l*. If an officer is transferred to another regiment he may take his charger with him or leave it behind, and in the latter case he receives 11s. a month from the regiment, taken out of the remount fund. If his successor in the regiment takes over the horse, the new proprietor repays to the remount fund the sum paid to his predecessor (11s. a month) before his arrival, and becomes absolute proprietor of the animal. An officer is allowed to make any use of his charger, but he may not enter it for a race. No officer is obliged to take a horse out of the ranks, but the Regimental Committee must pass any horse bought by private bargain. If an officer does not take a horse out of the ranks, he receives the sum of 33*l*. at the end of five years, or, if he leaves the regiment before the expiration of that time, he is entitled to that sum diminished by 11s. for every month short of five years. Chargers afterwards recognised as unsuitable may be exchanged for others of the same year's remount.

If a charger becomes unfit for the service by accident, and the accident is the fault of its owner, the latter has to produce an equally good horse to last the unexpired portion of the five years, but if the owner is not to blame, the horse is valued by the Committee, and the owner receives as many sixtieths of this price as he has had the horse for months. The animal is then sold, and the owner receives the same number of sixtieths of the sum it fetches. He then has a right to another charger. The same procedure as regards compensation is followed if the horse is killed.

If an officer is promoted to captain, when he is not entitled to remounts from the State, he may purchase the charger in his

* Every year each train company receives a horse, at least eight years old and fit for an officer's charger, from the cavalry regiments of the Army Corps. These may be purchased by lieutenants of the train.

possession by paying 11s. for each month of the unexpired portion of the five years for which the horse had to serve as his charger.

The above regulations apply to Prussia, Saxony, and Württemberg, but in Bavaria the same rights are also extended to lieutenants of infantry and engineers attached to the General Staff, who select horses from cavalry regiments, and the price of a charger in the heavy regiments and Lancers is 36*l.*, in the light horse and artillery 33*l.*, with extra payment for horses broken in the riding establishment of about 6*l.*

Lieutenants attached as adjutants to superior staffs, regimental, battalion, and *Abtheilung* adjutants in the infantry, pioneers, railway troops, field artillery (except horse artillery), foot artillery, musketry, gunnery, and under officers' schools, the Central Cadet Establishment, and the 1st and 2nd Berlin Landwehr Regiments, receive a sum of 825 marks (41*l.* 5*s.*) every five years, paid in 60 monthly instalments, and buy their own horses, but if an officer is without means when he receives one of the above appointments, the whole sum may be paid to him at once from the fund for the support of officers (see Chapter IV, Part II), and he may even receive an additional sum from the same fund. In this case his charger must be valued by a Committee composed as in the cavalry. In Bavaria, the same privileges are, in addition, extended to captains and subalterns of field batteries, and to lieutenants of the train, but the sum for these is only 33*l.*

In Prussia, Saxony, and Württemberg, lieutenants of field batteries and of the train have no right to either chargers or charger allowances, but ride troop horses. Captains of field batteries and of foot artillery have to buy a horse, and receive forage for it in the same manner as Captains of infantry, but the former also ride battery horses.

If a paymaster of a cavalry regiment keeps a horse, he is allowed a forage ration, and receives an annual allowance of from 3*l.* 12*s.* to 4*l.* 16*s.*, according to the regiment. In Bavaria the sum is slightly higher.

The following table shows the number of horses in peace and war for which forage is allowed to officers holding various appointments:—

	Peace.	War.
Army Corps Commander.. .. .	8	14
Inspector-General of Artillery	7	—
Divisional Commander	6	12
Inspector-General of Engineers	5	—
Brigade Commander	5	8
Inspector of Field Artillery	5	—
Inspector of Foot Artillery, Engineers, Rifles, Train, Infantry Schools, and War Schools	3	—
Inspector of Pioneers or Small Arm Factories	2	—
Emperor's General Aides-de-camp	6	—
Emperor's Wing Aides-de-camp, or Generals seconded from the Army	4	—

	Peace.	War.
<i>War Ministry.</i>		
War Minister	8	—
Directors of the general, administrative, and invalid departments, and Inspector of Remount Operations, each	3	—
Field Officers	2	—
Captains and subalterns	1	—
President of a Remount Purchasing Committee—		
If a Field Officer	3	—
If a Captain	2	—
<i>General Staff (Main Cadre).</i>		
Chief of the Staff of the Army	6	—
Chief of a section—		
If a General Officer	5	—
If a Field Officer	3	—
General Staff Officers	3	4
Chief of the Staff of an Army Corps	4	10
<i>Great General Staff (Auxiliary Cadre).</i>		
Chief of a section	3	—
Other Field Officers	2	—
Captains and subalterns	1	—
<i>Adjutants (Aides-de-Camp).</i>		
To Royal Princes, the War Minister, Army Inspectors, Chief of the Staff of the Army, Army Corps Commanders, Divisional Commanders, and Cavalry Brigade Commanders	3	4
First Adjutant to the Inspector-General of Field Artillery	3	—
First Adjutant to the Inspector-General of Engineers	2	—
To an infantry or field artillery brigade commander	2	4
To an Inspector of Field Artillery, Train, or Remounts, the Governors of Berlin or Mainz, and the Director of Military Education	2	—
2nd, 3rd, and 4th Adjutants to the Inspector-General of Field Artillery, 2nd and 3rd to the Inspector of Engineers, Adjutants to the Directors in the War Ministry, Inspectors of Foot Artillery, Engineers, Fortresses, Rifles, Infantry Schools, Small Arm Factories, and War Schools, Director of the War Academy, Commandants of the Cadet Corps and Central Cadet Establishment, each	1	—
<i>Fortress Staffs.</i>		
Commandant of Berlin	4	—
Commandants of six other large garrisons	3	—
Commandants of 1st class fortresses	3	—
Commandants of 2nd and 3rd class fortresses, of Potsdam, Munich, and Darmstadt, and Town Major in Berlin	2	—
Town Majors in seven large garrisons and in 1st class fortresses	1	—
Artillery Officer in a fortress, &c., &c., &c.	2	—
<i>Infantry.</i>		
Regimental Commander	3	5
Battalion Commander	2	3
Company Commander	1	2
Regimental Adjutant	2	3
Battalion Adjutant	1	2
Surgeon-Major	—	2
Surgeons, Assistant-Surgeons, and Paymasters.. .. .	—	1

	Peace.	War.
<i>Cavalry.</i>		
Regimental Commander	4	5
Field Officer	3	4
Squadron Commander	3	3
Regimental Adjutant	3	3
Lieutenant	2	3
Surgeon-Major	2	2
Surgeon and Chief Veterinary Surgeon	—	1
Paymaster	1	1
<i>Field Artillery.</i>		
Regimental Commander	4	5
<i>Abtheilung</i> , or Horse Battery Commander	3	3
Other Field Officer	3	—
Field Battery Commander	1	3
Regimental, or H. A. <i>Abtheilung</i> Adjutant	2	3
Field Artillery <i>Abtheilung</i> Adjutant	1	1
Lieutenant of Horse Artillery	2	3
Lieutenant of Field Artillery	—	2
Surgeon-Major	—	2
Surgeon, Assistant-Surgeon, Chief Veterinary Surgeon, or Paymaster	—	1
<i>Foot Artillery.</i>		
Regimental Commander	3	—
Battalion Commander or other Field Officer	2	—
Company Commander, Regimental or Battalion Adjutant	1	—
<i>Pioneers.</i>		
Battalion Commander	2	4
Battalion Adjutant	1	3
Company Commander	1	2
Lieutenant	—	1
<i>Train.</i>		
Battalion Commander	2	3
Adjutant or Captain	—	2
Lieutenant, Surgeon, Veterinary Surgeon, or Paymaster	—	1
<i>Couriers (Feld-Jäger)</i>	1	—
<i>Medical Department.</i>		
Surgeon-General of the Army	3	—
Surgeons-General of Army Corps	2	2
Divisional Surgeons or Surgeons in charge of field hospitals	—	2
<i>Intendance.</i>		
Army Corps Intendant	2	2
Intendance Councillor or Assistant	—	2
<i>Veterinary Department.</i>		
Inspector-General	2	—
Army Corps Veterinary Surgeon	—	1

On mobilisation, the extra horses to which officers are entitled are given to them from among those obtained by requisition. Those who supply their own extra horses receive an allowance of 22*l.* 10*s.*, but the horse must be passed by a Board. Horses lost on service through no fault of the owner are at once replaced at the public expense. Horses obtained from those requisitioned on mobilisation have to be returned at the end of the war, but after the last two campaigns officers were allowed to purchase their own requisitioned horse for 15*l.*

(e.) *Casting of Horses.*

Regiments have the right of casting at once any horse which shows defects of constitution in his first two years' service which render him unfit for Army purposes, and also of getting rid at once of an animal accidentally rendered useless. The sums thus gained go into the regimental remount fund, from which a new horse is immediately bought.

The horses cast from the mounted troops at the ordinary casting period (the end of September), are by no means all unfit for service. On the principles of strict economy, and the utilisation to the full extent of every resource, a selection is made from the cast horses for the following purposes:—

- 1st. For *Krümpers* horses (see p. 271).
- 2nd. For horses for one-year volunteers, who are mounted at their own expense.
- 3rd. For the train. The train battalions are remounted exclusively from horses cast from the cavalry and artillery of the corps.
- 4th. Regiments may exchange their worst horses for the best of those cast from others, and thus get rid of a larger number.
- 5th. For the gendarmerie.

The choice of cast horses is given in the above order. Horses are cast after the grand manœuvres, and the date is always announced in the local newspapers. A Board composed of two officers superintends the sale, and a non-commissioned officer acts as salesman. The sums paid for the horses are not retained in the regiment, but are returned to the Intendance, less a small percentage for the salesman.

As one-year volunteers are allowed to choose the regiment in which they desire to serve, it often happens that squadrons and batteries have more than their regulation number of this class. As they only join on the 1st October, and have to make application three months previously, each squadron or battery commander knows how many he will have, and therefore reserves a still serviceable cast horse for each of them. As the volunteers serving in the mounted branches have to purchase and maintain their horses, each has to pay from about 1*l.* 4*s.* to 1*l.* 15*s.* a month for forage, besides shoeing money,

and 20*l.* into the remount fund in the cavalry and horse artillery, 9*l.* 10*s.* in the train.

Gendarmes receive an allowance of 6*l.* per annum to mount themselves, and when horses are about to be cast the commander of the provincial gendarmerie is always informed, so that his men may make their selection. The price paid is the average of that of the six cast horses fetching the most at the subsequent sale.

The Remount Fund (*Pferde-Verbesserungs-Fonds*), mentioned several times above, is maintained in each regiment by the sums gained by the sale of horses at other times than the usual casting period, by the value of the rations of those same horses which are drawn in money, and by the contributions of one-year volunteers; but as all cavalry and artillery regiments are not equally sought after by volunteers, only 5*l.* of the 20*l.* are placed in the fund of the volunteer's regiment, the remainder being distributed among all the regiments of the arm in the Army Corps. In the train, 2*l.* 10*s.* is retained by the volunteer's battalion, and the rest divided amongst all the battalions of the Army.

B. THE HORSE CONSCRIPTION.

Every ten years, after the cattle census has been taken in the Empire, a muster of all horses is held by committees formed of a field officer and a civil official in each circle (*Kreis*), except in Berlin and in the naval districts. To make the decisions of those committees as uniform as possible, all those of an Army Corps are united together for the musters of one or more circles, so that they may apply the same principles of selection in their own. The place and time of the musters are determined by the civil governor and the Army Corps Commander, and the places are so chosen that the horses are not detained from their master's service more than half a day, and otherwise the musters are to be made as convenient for horse-owners as possible.

Every horse owner is bound to produce for those musters all his horses, except stallions, horses under four years old, mares great with foal or within a fortnight of having foaled, horses blind of both eyes, and those whose daily work is underground in mines. The only owners exempt are members of reigning families, foreign ambassadors, and government officials, surgeons, and veterinary surgeons who require the horses for the exercise of their profession; the horses required in the postal service and those in government studs are likewise exempted. Mayors or heads of estates have to be present or be represented at these musters, bringing with them a list of all the horses in their district, &c., showing age, sex, colour, and marks, and the owner's name, and they have also to provide men to look after the animals during the muster.

The horses are inspected by the committee and sorted into those fit for active service and those unfit, the former being

divided into riding horses, wheel horses, and other draught horses, and returns are made out in duplicate for each muster, one being sent to the Army Corps Commander, the other to the civil governor. The Army Corps Commanders cause a general return for each circle to be made, and this is sent in to the War Ministry.

On mobilisation, each province has to furnish *in natura* the number of horses required from it, the number to be furnished having previously been detailed for each circle and place by the civil authorities, in conjunction with the Army Corps Commander. The conditions of height for augmentation horses are as follows:—

Cuirassier horses, 16 hands 0·72 inches.

Other cavalry and horse artillery horses and riding horses in general, 15 hands 1·51 inches.

Wheel horses for artillery and train, and heavy draught horses, 15 hands 3·64 inches.

Artillery and train, lead and centre horses, 15 hands 1·51 inches.

Slight variations in height from the minimum heights given above are allowed for train horses and riding horses for dismounted troops. Augmentation horses should be between 6 and 14 years of age. Stallions, mares in foal, mares with foals under 3 months old, and blind, spavined, or lame animals are not taken, and those with one eye are only taken as draught horses.

On mobilisation taking place, the whole of the horses are mustered, the necessary number taken for service, a price fixed, and that price paid by the State. The country is divided into muster circles (*Musterungs-Bezirke*) containing as a rule not more than 1,200 horses, and the mustering point is so chosen as not to be that at which the horses have subsequently to be handed over. For each circle a Mustering Committee of three persons with a knowledge of horses, and, as far as possible, a veterinary surgeon, is formed. These committees, with substitutes to replace each member, are permanent and are re-elected every six years, and in peace have to assist the civil officials (*Landräthe*) in ascertaining the number of horses fit for service. When on duty they receive allowances.

On mobilisation, the *Landrath* informs the senior member of the committee as to the number of horses of each category to be furnished in his muster-circle, and the day and hour when and place where they are to be mustered and handed over. The *Landrath* also warns heads of towns, villages, and estates of the place and date of the muster, notices ready filled in, except the date, being kept prepared in peace.

Every horse owner, with the exception of those mentioned on page 277, is bound to produce all his horses (except as above) at the place indicated. Punishments are provided by law for non-compliance. The *Ländrathe* have to make all preparations for the maintenance of order during the musters, and heads of towns, villages, and estates have also to be present to ensure all the

horses in their charge being produced. The Mustering Committee sorts out the horses, rejecting those unfit for service, and draws up a list of those fit, from which those to form the required contingent are selected, a fourth horse being added for every three required, to guard against accidents. The owners are at the same time warned to produce the chosen horses on a certain day before the Levying Committees (*Aushebungs-Commissionen*). Horses not so chosen are allowed to be taken away at once. The president of the province can order more than one horse in three to be furnished extra, or that all the horses fit for service should be taken.

Every government-circle (*Kreis*) forms a separate district for purposes of the horse conscription, in which as a rule one Levying Committee is appointed, consisting of a *Landrath* and one or two military officers, with a military or civil veterinary surgeon, and three persons to value the horses, who are elected for six years. The latter are carefully selected, are sworn to value fairly, and receive pay and allowances when employed.

These committees once more examine the horses and draw up a list of the selected ones, the number of which must exceed by 3 per cent. that fixed as the contingent for the circle. This list shows the number of each horse, its owner's name and residence, its colour and marks, sex, height, age, class (riding, wheel, draught, &c.), regiment for which intended, price named by each valuer, and price actually paid. In fixing on the price for a horse, only the ordinary value in time of peace is to be considered, and each valuer gives his own opinion, the average being the price given. Each horse has to be handed over by his owner with head-collar, watering bridle, two headropes, and a good set of shoes, and it must be kept at the owner's expense until formally taken over. Horses chosen may be replaced by equally good ones furnished by the same owner, and approved of by the committee. After being valued, the horses are taken over by the military authorities, and each branded on the left side of its neck with the number of the Army Corps, and a ticket affixed to its mane with its number, the regiment it is to go to, and the name of the circle.

If harness or carriages have also to be furnished, the procedure is similar to the above, and, as a rule, harness and carriages are taken at the same time as draught horses. Requisitioned carriages must be four-wheeled, not too long, and, if possible, not weighing more than 12 cwt. They must have steel or iron axles and be able to carry at least 25 cwt. The harness may be either collar or breast, the traces of rope or chain, and belly-bands, back-bands, head-collars, and bits must be supplied. Each carriage must have a bucket, grease-box, 10 ropes, $7\frac{1}{2}$ to 9 feet long, a lantern, and 2 cornsacks, and each pair of horses 2 surcingle, 2 head-ropes (chains), 1 curry comb, 1 brush, and a whip.

The military authorities have to arrange in peace for detachments to be sent to take over and remove the horses or

wagons, and such may be taken from men of the reserve, or may even in special cases be composed of hired civilians. One man to three horses is the usual number. These detachments take the horses to their regiments according to the plan of mobilisation.

Returns have to be furnished by each committee of the horses, carriages, &c., raised, and the sums paid, and each owner receives a certificate of having furnished a horse, &c., and gives a receipt for the money.

If by any chance a circle cannot furnish the number of horses required, the deficiency is made up by other circles.

CHAPTER XX.

MOBILISATION.

AT the head of any chapter on the mobilisation of the German Army should be stated that the keynote of the whole system is decentralisation—decentralisation to the smallest unit, without which, and without a systematic and carefully prepared plan in which every individual has his place assigned to him in advance, mobilisation, in the modern sense of the word, and under modern conditions of warfare, is impossible. In 1870 the whole vast machinery was said to be set in motion by a single telegram to Army Corps Commanders running—"Mobilisation according to plan. 17th July is first day of mobilisation."

A. GENERAL REMARKS ON THE "PLAN OF MOBILISATION."

The plan of mobilisation lays down that each Army Corps is to mobilise independently under the supervision of its Commander, with the assistance of the supreme civil authorities of the province. Under his direction the commanders of units mobilise their troops, the corps intendant and the commander of the train battalion mobilise the administrative services and trains, and the commandants of fortresses proceed with the armament of their fortresses, if such a measure is considered necessary.

The plan of mobilisation, determining in the first instance the composition of the active Army on the war footing, shows the general measures to be taken for supplying the requisite men and material. Every year, after the receipt of the effective states from each Army Corps, the War Minister notifies the general distribution of the troops for raising the Army to the war footing, and upon this as a basis the commanders of corps, divisions, brigades, regiments, &c., carrying out the principle of decentralisation to the smallest unit, elaborate more detailed

instructions, which are submitted for the examination and approval of the War Minister. The inspectors of artillery, engineers, rifles, and train, and the chief of the Great General Staff respectively take part in arranging the distribution of persons, &c., within their own sphere of control. The plan also shows how and where the *depôt* and reserve troops are to be formed, whence horses, arms, clothing, &c., for them are to be obtained, and what persons are to form the representative staffs remaining at home.

Staffs and troops are as a rule mobilised in their peace garrisons, and staff guards and auxiliary services at the headquarters of the staff to which they are to be attached. The train formations, bridge trains, field hospitals, and *personnel* for war hospitals are mobilised at the place where the train *depôt* of the Army Corps is situated, and the new formations of field artillery at the places where are the artillery *depôts* in which the material for their equipment is stored. Corps Commanders may for local reasons change the place of mobilisation of any unit, but information must be given to the War Minister, who informs the civil authorities. The above principles apply also to units stationed outside the Army Corps district, but in this case the two Corps Commanders concerned arrange their mobilisation conjointly, and keep one another informed of its progress. *Depôt* troops are usually formed at the stations of the headquarters of the units they belong to, and their formation is superintended by the commander of that unit. Guard Reserve or Landwehr Regiments and reserve rifle battalions are formed at the headquarters of the corresponding active formations, provincial Reserve or Landwehr battalions at the headquarters of the Landwehr districts, or of line regiments, reserve cavalry regiments at the headquarters of those regiments which keep their stores in peace, reserve pioneers at the headquarters of pioneer battalions, and reserve artillery at places in which there are artillery *depôts*.

The plan of mobilisation holds good for one year only, from 1st April to 31st March, and no changes are made in it during that time; any changes or improvements introduced can only take effect from the following 1st of April.

The Commanders of Army Corps draw up "Mobilisation Instructions" based upon the plan of mobilisation, the orders of the War Ministry, the number of officers and reserve and Landwehr men available, the results of the horse census, and the instructions as to the use which may be made of the railways during the mobilisation period. In them, the time allowed to each unit for its mobilisation is laid down, and special measures are prescribed for the quickened mobilisation of the cavalry, one battery of horse artillery, and the first echelon of trains in each Army Corps. As a general rule, the field troops are mobilised first, and their *depôts* formed, then the field reserve troops, and lastly, the garrison troops. In calculating the time in which the preliminary work of mobilisation should be carried

out, it is taken as a rule that if on any day the order for mobilisation reaches the Army Corps Commander before 8 A.M., that day is the "First Day of Mobilisation."

The distribution of the available officers to the various posts in the war formations is made in peace, and communicated to each individual. The interests of the service are first considered, and the seniority and physical and intellectual qualities of each individual have their influence on his selection. The youngest men are placed in the field army and staffs, but field reserve formations are strongly leavened with active officers. Reserve officers are generally posted to the regiments to which they belong, or their reserve formations. Landwehr officers, in case of necessity, may be employed in all categories of troops, field or garrison. Sergeant-Major-Lieutenants are invariably posted to the garrison army. All the higher posts equivalent to commander of a regiment or above, all general staff appointments and those of staff adjutants are filled by nomination of the Emperor, but other posts are filled by that of the Army Corps Commander, the Inspectors of special arms, the chief of the Great General Staff, or the chief of the Field Gendarmerie, who, according to the lists in their possession and the directions contained in the plan of mobilisation, defining the composition and numbers of all the mobilised and immobilised troops, tell off the officers in time of peace to the respective regiments, &c., within their sphere of command. Should the number of officers in the corps district be insufficient to complete the infantry and cavalry, the corps commander reports to this effect to the Minister of War, who decides which of the neighbouring corps is to make up the deficiency on mobilisation. For the formation of the ammunition columns and train, each corps, after deducting the number of cavalry officers of the reserve and Landwehr necessary for its own purposes, gives up the surplus to the Inspector-General of Artillery, who, in his turn, after taking the number required for the ammunition columns, hands the remainder over to the Inspector of Train.

These preparatory measures terminate in the corps and circle administrations by the issue of *calling out orders*, in which is shown the regiment to which each officer is appointed, and the place where he has to present himself on mobilisation.

The general distribution of the medical officers and apothecaries is made by the principal medical officer of the corps.

The Army Corps Intendance keep the lists of the intendance, commissariat, pay, and sanitary officials. In these lists is shown the distribution of the officials according as they are appointed to the active forces, the reserve or Landwehr, and also the civilians appointed in the event of mobilisation as chief presidents of provinces.

Employés in the postal, telegraph, and railway services are appointed by the chief director of posts and telegraphs, and the Minister of Home Affairs, acting in conjunction with the Chief of the General Staff.

All these officials receive the orders referring to them from their heads of departments; the troops to which they belong in time of peace, or the commanders of Landwehr districts, of which they form part when on furlough, only receive intimation that such and such orders have been given.

As regards the lowest class of officials (hospital and telegraph assistants), the commanders of Landwehr districts receive information of the number of men required, and of the time and place at which they have to appear; on this as a basis they issue the *calling out orders*.

Passing now to the lower ranks, the commanders of corps determine the number of men of the furloughed lists to be incorporated in each unit. They have at their disposal for this purpose, the men of the reserve and Landwehr, those on furlough at disposal of their regiments, the recruits, and the men of the Ersatz reserve. As far as possible, the men of the furlough lists are called out by classes. Once the mobilisation of the Guards completed, the supernumerary men who have served in them are at the disposal of the Army Corps on whose lists they are borne. All furlough men of the rifle battalions are incorporated in the battalions of that arm belonging to the Army Corps on whose lists they are borne. Men on the furloughed lists of the railway regiment, and those employed on the railways, are all posted to the railway troops. The men of the youngest classes who have received a complete military instruction are posted to the field troops, those of the next oldest classes to the field reserve troops, the oldest of all and those less fit for active service to the garrison troops, and the dépôts are formed of as good elements as possible. It will be observed that in this there is no mention of whether a man belongs to the reserve or Landwehr. In fact, the two are regarded as much the same now in Germany, and only physical and professional fitness for the field is considered in telling off the men to the various categories of troops. The regulation establishments must be strictly adhered to except in the case of dépôt troops, in which pensioned non-commissioned officers, or men who have not presented themselves in time to be posted along with their own class may be retained as supernumeraries. The tradesmen of all troops remain with the dépôts, and the strength of the large detachments of tradesmen is made up by incorporating untrained men of the 1st Ban of the Landsturm.

As regards the collection of horses, the Corps Commander determines the number which each regiment has to receive and whence it will draw them, according to the resources of the country and the directions contained in the plan of mobilisation. The mode of supplying horses is determined by the Corps Commander and the chief president of the province; they also decide the points to which the horses are to be brought and give intimation thereof to the troops. On the 1st October of each year the Corps Commander appoints the members of the receiving committees in the event of mobilisation and notifies the

same to the civil authorities. The service orders for these officers are sealed and transmitted to the regiments to which they belong; the instructions notify the places at which the horses are to be delivered, the circles which provide the horses, and the regiments to which they are to be allotted. These instructions are not to be handed over to the officers until the order for mobilisation has been received. The Landwehr District Commanders, upon receiving information of the places within their districts where the horses are to be delivered, and of the number of horses to be supplied, appoint men from the Landwehr or Landsturm to convey the horses to the regiments, unless persons have been appointed to this duty by the civil power. Detachments will also be sent from the regiments to the points of assembly for the purpose of taking charge of the horses. The civil authorities on their part, after receiving orders from the chief of the province, inform the proprietors of horses of their obligation to deliver the animals at certain indicated points immediately on receipt of the demand.

B. GENERAL REMARKS ON THE EXECUTION OF THE "PLAN OF MOBILISATION."

The order for mobilisation is given by the Emperor. The Minister of War communicates it at once to the Great General Staff, the chief administrative authorities, and the Commanders of Army Corps. Within 24 hours of its receipt Commanders of Army Corps are required to communicate the order to the troops under their command in the following sequence:—

1. The Commanders of Landwehr battalion districts.
2. The Commanders of Divisions.
3. The brigade staff of the artillery, staffs of brigades, and regiments of infantry and cavalry.
4. The staff of the rifle battalion.
5. The engineers.
6. The staff of the train battalion.
7. The intendants.
8. The commandant of headquarters.
9. The artillery dépôt, the chief presidents, and the director of posts.

The Commanders of Landwehr districts in their turn communicate the order to the Landrath authorities; the latter are bound to give effect to the order of the military chiefs even should they not have received intimation of the mobilisation from their own immediate superiors.

The order is worded as follows:—

"By Imperial decree, from such and such a date, the mobilisation is ordered of such and such an Army Corps. In consequence thereof this order must be carried into effect according to the plan of mobilisation in your possession. I

beg that you will inform me on what day and at what hour you receive this order."

The order of mobilisation must leave no doubt on the following points:—What troops are to be mobilised (field troops, field reserve troops, Landwehr, &c.), what day the mobilisation is to commence, and whether the fortresses are to be armed.

Blank forms for the order of mobilisation are to be prepared beforehand, so that only the date and signature remain to be inserted.

On receiving the order, the Commander of the Landwehr district notifies the date and hour of its receipt, and so as to avoid any misunderstanding repeats by telegraph the contents of the order and proceeds at once to put it into execution. For his assistance, each line regiment sends a detachment consisting of not fewer than 1 officer, 1 surgeon, and 6 efficient non-commissioned officers. Should the Army Corps Staff deem proper, similar detachments may be sent to the different points of assembly within the Corps District, which return to their regiment directly the last large batch of men has been despatched.

The arrangements made by the Landwehr districts for calling out the men and assembling them are detailed in Chapter V, Section C, and those for the horse conscription in Chapter XIX, Section B.

The selection of centres of mobilisation is determined by conveniences of communication; they are usually on lines of rail in the neighbourhood of stations. As a general rule, the troops are mobilised at their headquarters. On arrival at the points of assembly, the men are medically inspected, a medical officer being detached from the nearest regiment for this purpose on the first day of mobilisation. Should any be found unfit for active service, they are dismissed to their homes.

With the reservists arrive also the escort parties which are detached from the infantry regiments for duty in their corresponding Landwehr districts.

After the arrival and inspection of the reservists, the commander of the Landwehr battalion district hands them over to the commanders of the escort parties, who organise them in marching detachments of not more than 1,000 each; the commanders prepare the marching routes, and then, either on the same or the following day, despatch them to their destination under the command of officers or non-commissioned officers. The railway authorities are given due notice by the commanders of the districts, so that the transport may proceed without delay; if necessary, the station-masters of intermediate stations are warned to prepare quarters for any detachments which may make a temporary halt. The commanders of the marching detachments receive from the commander of the district the sum necessary for the expenses of the men on the road; when moving by rail, they receive from the commander of the district a return in triplicate, referring to the number of the

detachment and the quantity of baggage, one copy of which is given up to the railway authorities on entrainment, the second is handed over to the guard of the train, and the third is presented, beforehand, to the intendant.

The commander of the escort party returns to his regiment with the last large detachment of men, leaving, if necessary, a non-commissioned officer to bring up any late arrivals.

At auxiliary points of assembly and at places of concentration appointed for the reservists of the Guard or for the reception of horses, the same course is pursued as in the battalion districts. Line officers detached to these points act like the commanders of escort parties in the district.

Generally, irrespective of the concentration of the Guard reservists from all points of the kingdom, the arrival of the men at their corps proceeds without check and with rapidity, owing to the territorial system which forms the basis of the military organisation of Germany. Separate movements along lines of rail are limited, generally, to small detachments, and take place chiefly for short distances. The movement of small isolated detachments, for the purpose of joining the Guard or regiments of the corps stationed at some distance, is attended with no difficulty on the lines of rail, which at this period, are not encumbered with masses of troops or transports, as, on principle, *the period of mobilisation is quite distinct from the period of strategical concentration of the troops*, and the Army Corps, speaking generally, does not commence to move until provided with all its men and material. Thus the bulk of the reservists, arriving at the points of assembly within three days of the order of mobilisation, are able to appear on the following day at their regiments, and the remainder on the day after.

The regimental headquarters are seldom situated at the same place as those of the corresponding Landwehr districts; but, nevertheless, in the majority of cases, they are within the boundaries of the corps *rayon*, and the distances from the sources whence they draw their men are inconsiderable, or at least communication with them is rapid, because the permanent quarters are selected for reasons of supply, &c., in the large towns, the communication between which and the surrounding district is by rail.

One circumstance remains to be mentioned which apparently would be detrimental to rapidity of mobilisation, viz., that some regiments are quartered outside the corps *rayons* from which they receive the men for filling up the establishment. At first sight, the mobilisation of these troops might appear to be attended with great difficulty; but it should be remarked that these regiments receive their men from a very limited number of districts (ordinarily from two); besides this, as has been mentioned above, in this period of the mobilisation, when the reservists are in process of being despatched to their respective destinations, the movements by rail are of a very unimportant character, and hence the transport of the men destined

to complete the establishment is not likely to meet with delays.

In the appendix to the plan of mobilisation are shown the establishments in time of war, both in men and material. Special regulations define, in addition, the sources from which every description of store is received and maintained. These stores consist of clothing and equipment, horse equipment, arms, provisions, and carriages.

As regards clothing and equipment, the troops make their own in the regimental workshops. Articles not required in time of peace, and which can be purchased without difficulty, are not kept in store, but are bought when the emergency arises. The requirements on mobilisation depend upon whether the troops belong to the field or garrison Army. In the former case every man and horse on the war establishment receives a complete equipment. In the case of corps which have no cadre in time of peace and are formed only in war, certain troops are appointed to look after their stores. Thus, regiments of infantry and cavalry are deputed to prepare the equipment of the staff guards and reserve cavalry, pioneer battalions for the reserve companies and bridge trains, artillery regiments for reserve batteries and for ammunition columns, and train battalions for their various formations, including bearer companies and field hospitals. Each unit of the active army keeps up a complete supply of clothing, and those articles of equipment most easily worn out, for its war establishment.

With regard to the armament, the troops receive it from the artillery depôts, the officers in charge of which keep the Corps Commander informed of the state of the stores. These depôts keep up their supplies by requisitions on the small-arm factories, powder-mills, gun foundries, &c. As a general rule, each regiment of infantry or cavalry is provided in time of peace with sufficient arms to meet its requirements on mobilisation. The companies or squadrons have charge only of the arms for the peace establishment, the remainder being kept at regimental headquarters. If the latter have no magazines available, the surplus arms are kept in the artillery depôts. As regards the guns and ammunition wagons for field artillery and for the ammunition columns, each battery maintains in peace the full complement of stores in accordance with the appendix to the plan of mobilisation. In time of peace the troops have with them only the stores and material necessary for practice and the autumn manœuvres, but batteries quartered at places where there are no artillery depôts have with them their complete war equipment. The artillery depôts maintain the complement of warlike stores mentioned in the appendix to the plan of mobilisation, not only for the war equipment of the troops, the armament of fortresses, and the formation of siege parks, but also for the ammunition columns and the various reserve units of the artillery formed on mobilisation.

The train depôt, under the orders of the commander of the

train battalion in each Army Corps, has the same functions with regard to transport as the artillery magazines in respect of armament.

Besides the carriages with their appurtenances (horse equipment, spare wheels, &c.), the administration of the train dépôt has under its supervision not only all the clothing and equipment for the train and the administrative branches of the Army Corps, but the various special material required by these departments, *e.g.*, office stores, surgical instruments, saddlery, field kitchens, boxes and chests, stretchers, tents, and certain camp equipage.

Part of the hospital material is issued for use in the hospitals and remains in charge of the latter. The train dépôt is bound to keep up the stores in question, and to enter into contracts for the purchase of new stores under the supervision of the intendant.

As regards preparation for the field of the field post administrations, timely arrangements must be made for the necessary transport, &c., laid down in the plan of mobilisation; the administration is responsible for maintaining it in good order. Exception is made in favour of certain stores not required in time of peace; these are to be purchased at the time of mobilisation.

In the stores of each pioneer battalion are kept, in addition to its own proper train, the materials of the pontoon train.

In time of peace only regiments of cavalry and artillery are able to keep a proportion of carts for bringing forage from the magazines; but during the autumn manoeuvres all the troops have with them part of their own train. During these exercises the pontoon train is also taken into use.

The articles of equipment for the field and reserve telegraph detachments are under the charge of the pioneer battalions, which form those detachments on mobilisation.

With regard to commissariat supplies for the troops. contracts for the purchase of flour are concluded beforehand, and, on receipt of the order of mobilisation, biscuit for the iron ration is prepared and issued to the troops. The remaining articles of the iron ration are purchased by the troops themselves, but arrangements must be made beforehand as to where these articles are to be obtained. The provisions required to fill up the provision and wagon park columns are issued from the Intendance Magazines, and the Intendance also conclude contracts for the delivery of provisions and forage at the points of concentration of the troops on the theatre of war before the commencement of operations. For this purpose it is laid down that, between the second and fifth days of mobilisation inclusive, a six days' reserve of commissariat supplies is to be delivered at the points of concentration of the troops for the entire number of men which it is proposed to assemble there.

For all these arrangements each unit is provided with a Mobilisation Calendar (*Mobilmachungs-Termin-Kalender*), in which is shown day by day, commencing from the first day of

mobilisation, the successive steps which have to be taken, *i.e.*, what men have to arrive, what men have to be clothed and armed, what arrangements have to be made for drawing carriages, &c., from store, and what reports have to be made each day to the military, civil, and railway authorities. When the mobilisation of each unit is finished, its Commander reports it as "ready to march" (*Marsch-bereit*) to his immediate superior, and, on all reports being received, the Corps Commander reports to the Minister of War and to the Emperor that his Army Corps is ready to take the field. To the former he also renders a statement of the number of officers and men in the Corps District liable to serve who have not yet been called out.

On the departure of the field troops, the whole of the arrangements for clothing and equipping them devolves upon the Commanders of the dépôts, who carry out their duties through the agency of special clothing commissions. Ordinarily, by the time the field, field reserve, and Landwehr troops are mobilised, and the dépôts formed, a very small supply of stores will be left in the regimental magazines. It becomes necessary to increase it so as to be able to comply with the probable demands of the mobilised troops. At the same time it is recommended to abstain from purchasing the articles ready made, as experience has shown that articles obtained in this way are neither so cheap nor so durable as those made by the regimental tradesmen.

The establishment of the latter is very large (200 men per dépôt battalion); their number may, however, be increased by private workmen, should there be any fear that the demands of the mobilised troops would not be completed in time by the staff available. The different articles of clothing and equipment are sent to the Army at a stated time, and in accordance with the demands, usually every three months; in the interval the troops must eke out the small store in the regimental train. The troops are allowed in urgent cases to purchase any necessities, such as shirts, socks, and the like, on the spot, under the condition that they at once inform the dépôt of the fact. Besides this, the superior authorities are allowed, under exceptional circumstances, to collect the necessary articles for the troops in the enemy's territory by requisitions without payment.

Special orders as to the armament of fortresses are issued in each case, but, in the event of a fortress being placed in a state of siege, all the troops are made subject to the Commandant or Military Governor. The garrison of each fortress is distinctly laid down in the secret instructions preserved in the archives of the fortress. In these instructions are shown the defensive means of the fortress on a war footing, and in what way they are to be made ready in time of peace.

On the mobilisation of the Army, the War Minister, with the sanction of the Emperor, issues a special order with regard to the armament of each fortress, and, should this not be stated in the plan of mobilisation, appoints the troops necessary for its occupation, but in urgent cases the Corps Commander has the

right, for the security of those frontier fortresses whose garrisons have not yet arrived, to employ all the troops in the vicinity. For this purpose he may on his own motion prescribe the necessary defensive works, and demand working parties, tools, and material from the civil authorities.

C. MOBILISATION ARRANGEMENTS SPECIAL TO EACH ARM.

Before proceeding to consider the arrangements special to each arm, it should be noted that no lists of officers of the 2nd Ban of the Landwehr have yet been published. The numbers of those of the Reserve and (as then existing) Landwehr were carefully counted from the 1887 Army Lists, and it may be safe to estimate the numbers of officers who will be replaced in the 2nd Ban of the Landwehr at two-thirds of the numbers then shown as in the Landwehr.

(a.) *Infantry.*

In 1870 the average period required to mobilise an infantry regiment was about seven days, and the following was approximately the order of progression. On the 1st and 2nd days the regiment sent detachments to the Landwehr districts to assist in their work, and cadres to bring in the batches of reserve men; the officers on leave or on command were recalled, the men of the active army reclothed, and the dépôt cadres formed. On the 3rd, the arms for the augmentation men and the war supply of ammunition were drawn from the artillery dépôt, the rifles were inspected and distributed to companies, the side-arms were sharpened, and arrangements were made for the accommodation of the horses on arrival. On the 4th day the horses arrived, on the 5th the men on furlough at the disposal of the regiment. On the 6th and 7th days the reserves arrived and were clothed and equipped on arrival. On the evening of the 7th day the companies were paraded on war strength, and the battalions were put through a few movements. The regiment was then reported ready to march.

Since 1870, however, the Germans have never ceased to work at the diminution of the time required for mobilisation. The battalions of a regiment have been, as far as possible, concentrated in one garrison, new lines of rail have been constructed to connect outlying garrisons,* and the calling out by public announcement has largely supplanted that by individual summonses. By all these means the period required for the mobilisation of a regiment has been reduced to about *five days*, and it is only in exceptional cases that this period will be exceeded.

The reserve (Landwehr) battalions were ready in 1870 on the 10th to 15th days, but with recent improvements it is

* At present (April, 1888) 91 regiments have all their battalions in one garrison, and 59 have one detached battalion.

believed that they can now be mobilised in from *eight to nine* days.

The 4th Field Battalions will, it is understood, be formed by the dépôt battalions in the first instance, the dépôt taking advantage of the regulation allowing it to incorporate 4 officers and 300 men above its establishment of 19 officers and 1,718 men. On the departure, about the *eighth* or *ninth day*, of the newly-formed 4th Battalion, the dépôt, then reduced to 988 men, is ready to receive fresh batches of men to bring it up to its establishment.

In frontier garrisons, the infantry at once takes the field with its peace establishment to watch the frontier and cover the mobilisation, leaving a small number of men behind to receive, arm, equip, and bring up the reserves.

Passing now to the consideration of the means of raising the infantry to war strength, it will be seen from the tables in Appendix IV that the total strength of the infantry and rifles on the war footing, exclusive of Landsturm, is 34,324 officers and 1,636,792 non-commissioned officers and men. The peace establishment of officers is 10,807, and the number of reserve and 1st Ban of the Landwehr officers is (Chapter V) 9,884, giving a total of 20,691. If to these be added (estimated) 3,190 officers of the 2nd Ban of the Landwehr, and 2,780 sergeant-major-lieutenants (2 per company) in the dépôts, we get a total of 26,661, or 7,663 short of the requirements. These vacancies will have to be filled up by the promotion of ensigns, or by non-commissioned officers being appointed to act as officers.

Of the 1,636,792 non-commissioned officers and men required, 64,753 are tradesmen at the dépôts, who can be taken from the untrained Landsturm, leaving 1,572,039 trained. The tables in Chapter V show that 1,412,919 fully trained men are available and the balance can be easily made up from the one-year volunteers serving in the ranks, the trained Ersatz Reserve, and, in Landwehr Dépôts, the youngest classes of the Landsturm of the 2nd Ban.

The composition of a German infantry regiment when mobilised may best be estimated from past history. Thus on mobilisation in 1870, the 91st Regiment gave over to the staff 1 field officer; to the Landwehr formations 1 captain, 2 1st lieutenants, and 1 2nd lieutenant; to the dépôt battalion 7 officers, 15 under-officers, 5 bandsmen, 59 men, 1 paymaster, and 36 tradesmen; and to the cavalry a 2nd lieutenant who had been previously attached to it; in all 13 officers, 115 non-commissioned officers and men and 1 paymaster. To bring it up to war strength it received—

- 17 Reserve and Landwehr officers.
- 2 Officers on half-pay.
- 24 Aspirant officers.
- 2,150 Men of the Reserve and Landwehr.
- 400 Men of the Ersatz Reserve.
- 69 Horses.

When the service battalions had been formed, there remained for the dépôt—

- 15 Officers (including three captains).
- 64 N.-C. officers.
- 15 Bandmen.
- 1,128 Men (including 445 recruits of the Ersatz Reserve and Volunteers).
- 2 Medical officers.
- 1 Paymaster.
- 1 Armourer
- 221 Tradesmen.

An average taken from the regimental histories of 37 regiments in the war of 1870 shows that each gave 7·7 officers to the dépôts, 7·7 to the reserve formations, and 3·5 to the staff, &c. The average number of officers of the active army taking the field with the regiments was 38·4, the actual numbers varying from 32 to 51. The average number of captains retaining command of their own companies was 7·8 per regiment. The average number of reserve officers incorporated in a regiment was 8·6, and of Landwehr officers 7, and that of officers' appointments held by non-commissioned officers 14. The last figure will be considerably diminished in the case of any future mobilisation, as, since 1870, the proportion of reserve and Landwehr Officers has very largely increased.

(b.) *Cavalry.*

In 1870, the cavalry regiments were mobilised in different manners according as they were stationed close to the frontier or not. Those on the frontier or near it marched on the first day of mobilisation with all horses fit to take the field in the ranks of their four war squadrons. Those next then hastened their mobilisation, and were ready to start about the 5th day, while those farthest removed from the theatre of war mobilised leisurely and employed 7 to 11 days in the operation. As shown in Chapter VII, a German cavalry regiment can take the field on the 1st or 2nd day of mobilisation with 135 horses per squadron, and it is certain that this course would be pursued for the regiments on or near the frontier, the men and horses required to bring the squadrons up to 150 sabres being sent after them. The accelerated plan employed in 1870 would certainly be adopted for the rest of the cavalry, and so we may say that the whole of the active cavalry regiments could be mobilised in *from one to five days*. The reserve cavalry regiments would probably require 12 to 15 days before they were ready to march.

The formation of the cavalry regiment in five squadrons in peace is of great assistance in mobilising four war squadrons. Every year one of the squadrons is secretly named as the dépôt squadron for that year, and as all are thus equally liable to become dépôts there is none of that moral sense of inferiority which must be felt by men who know they are "only a dépôt."

All squadrons are equally fit to take the field, and thus the war squadrons are enabled by the transfer of men and horses from the dépôt squadron to at once attain a strength nearly approximating to the war establishment, and a strong and efficient dépôt is left to push on the mobilisation and preparation of reserves and reserve formations.

The war strength of the German cavalry is 3,203 officers and 106,993 men. The peace strength of officers is 2,358; the number of reserve and 1st Ban of the Landwehr officers is 2,684, to which may be added (estimated) 680 officers of the 2nd Ban of the Landwehr, giving a total of 5,722 officers, or an excess of 2,519. The number of fully trained men is 215,709. From the 106,993 men of the war establishment must be deducted 6,498 tradesmen who may be untrained Landsturm men, so that the total number of trained men required is 100,495. The excess of men above requirements is therefore 115,214. These supernumeraries would be utilised in the train and artillery columns as drivers, and a proportion of cavalry reserve officers would also be posted to these formations.

In 1870, out of 12 regiments whose regimental histories have been compiled, only 3 received the full number of officers. The average number of active officers in each was 18, of reserve officers 3, and of aspirant officers 2. The average number of officers detached for Staff duties was 2.7.

(c.) *Field Artillery.*

The chief difficulty in the mobilisation of the field artillery lies in the supply of horses, the peace strength being 18,232, besides officers' horses, and the war strength 152,239. In peace, a 4-gun field battery has 45 horses, while its war establishment is 150, and a 4-gun horse battery 85, with a war establishment of 236. This difficulty has in a measure been surmounted by giving certain batteries on the frontier an increased establishment, but in no case is the peace strength one-half of the war strength in horses. Measures are taken in each Army Corps to mobilise one horse battery in the same time as the cavalry, *i.e.*, within five days, but the remainder of the field artillery cannot well be mobilised until the *seventh day*.

The war strength of the field artillery is 4,640 officers and 168,231 men. The officers of the active Army number 1,939, those of the reserve and 1st Ban of the Landwehr 1,280, and those of the 2nd Ban of the Landwehr (estimated) 398, total 3,617. To these may be added 150 sergeant-major-lieutenants, leaving a deficit of 1,023 officers. These may be made up by appointing supernumerary 2nd lieutenants "artillery officers," or by posting cavalry reserve officers to the ammunition columns, or by promoting ensigns. The number of men required is 168,231, from which must be deducted 4,921 for the tradesmen, leaving 163,310. The total number of trained men available is 168,842, so that all requirements are amply covered. Possibly

cavalry reserve men would be utilised as drivers in the columns, so as to retain trained drivers in the dépôts.

(d.) *Foot Artillery.*

The foot artillery formations could be mobilised, as far as the battalions are concerned, in the same time, category for category, as the infantry, but the park ammunition columns would take from 10 to 12 days.

The total numbers required are 1,882 officers and 80,707 men. The peace strength of officers is 730, the number of reserve and 1st Ban of the Landwehr officers 382, and that of the 2nd Ban of the Landwehr officers (estimated) 130. Adding 120 sergeant-major-lieutenants for the 14½ non-mobilised battalions and 2 dépôt companies, the deficiency is 520 officers, a rather important number when the nature of the duties of foot artillery is considered, and one which would have to be filled up by the appointment either of supernumerary 2nd lieutenants or of ensigns. From the total number required must be deducted 3,050 tradesmen at the dépôts (untrained Landsturm men), and 1,600 drivers of the park ammunition columns, who would be supplied by the furlough men of the cavalry, field artillery, or train, leaving 76,057 men required, a figure amply covered by the 77,558 men available (page 59).

(e.) *Pioneers.*

The time required for the mobilisation of the field pioneer companies would be about the same as that for the infantry, while the divisional bridge trains would not be ready until the eighth day, and the corps bridge trains not until the ninth or tenth.

The pioneers require 1,259 officers and 56,416 men on the war footing. From the number of officers required should be deducted 234 officers of the train or cavalry reserve attached to the bridge trains and telegraph sections, leaving 1,025 required. The officers of the active army number 446, those of the reserve and 1st Ban of the Landwehr 262, and those of the 2nd Ban of the Landwehr (estimated) 85. If to these we add 38 sergeant-major-lieutenants at the dépôts, we get a total of 831, leaving a deficiency of 194 to be filled by absorbing supernumerary officers or by promotions. The number of men required is 56,416, from which are to be deducted 1,330 tradesmen, leaving 55,086, and the total of trained pioneers is only 44,864. In the various engineer formations, however, are included 6,547 drivers of the train, so that the deficiency of fully trained men is reduced to 3,675, which number would be taken from the trained Ersatz Reserve.

(f.) *Railway Troops.*

The railway troops, not being required so early as the others, would be able to complete their mobilisation at leisure.

They require for the war establishment 247 officers and

7,869 men. The peace establishment of officers is 112, the number of reserve and 1st Ban of the Landwehr officers is 252, and that of the 2nd Ban of the Landwehr officers (estimated) 103, so that a considerable excess of officers is available. The number of fully trained men is 4,724, but in the figures of war strength are included 240 tradesmen, and the whole of the reserve and Landwehr men employed on the railways are at the disposal of the railway troops, so that there is no doubt as to their being able to complete the formation of all their units.

(g.) *Train.*

The mobilisation of a train battalion is superintended by the Battalion Commander, who draws up his mobilisation diary after consultation with the Intendant and the principal medical officer of the Army Corps. For this purpose he has at his disposal the reserve and Landwehr men of his own battalion, the reserve and Landwehr men of the Army Corps who have been trained as stretcher bearers, &c., and a number of men of the older classes of the cavalry reserve and Landwehr, who act as drivers. The latter are also utilised as grooms for staff and departmental officers, and in this capacity they are borne on the rolls of the mobilised train battalion. The regimental transport drivers are mobilised by their own regiments, and are former soldiers, or soldiers still serving in the ranks of those units, except in the case of the foot artillery, pioneers, and railway troops. The drivers of which would mostly be supplied by the cavalry reserve. The sergeant-majors of the bakery column and bearer companies are supplied by the infantry regiments of the Army Corps, and the men of the former are partly those of the bakery section belonging in peace to the battalion, and partly men of the infantry and reserve who have been trained as bakers. The mobilisation of the bearer companies may be handed over to an infantry regiment in the same garrison as the train battalion. The hospital assistants for those companies are taken from men trained as such who have been passed to the reserve.

The special plan of mobilisation for each battalion lays down what formations it has to mobilise for work on the lines of communication or duty with Reserve or Landwehr Divisions, and wagons, harness, &c., for these purposes are kept in its dépôt.

The formations likely to be wanted earliest are mobilised first. Thus the mobilisation of the field bakery column is pushed on with all speed, so that it may be despatched early to the zone of concentration to prepare bread for the troops. Next in order come the bearer companies, and the remaining columns are generally mobilised in two batches, the first comprising two provision columns and four field hospitals, the second the remainder of the columns. The wagon park columns follow the corps as soon as practicable.

In the train dépôts are also kept carriages and harness for reserve and Landwehr formations, and these are sent to the point

of mobilisation of the latter on the first or second day of mobilisation, as delays might afterwards ensue by the railways being fully employed.

The war requirements of the train formations proper are 1,236 officers and 95,211 men. There are 256 officers of the active army, 540 of the reserve and 1st Ban of the Landwehr, and (by estimation) 60 of the 2nd Ban of the Landwehr. Adding 114 sergeant-major-lieutenants, the deficiency is 276, which would be covered by officers of the cavalry reserve. To the 95,211 men required must be added 6,525 for the train drivers and officers' servants included under the head of field staffs, giving a total of 101,736. On the other hand, there must be deducted 2,280 tradesmen (untrained Landsturm) and 26,424 men for bakers, stretcher bearers, hospital assistants, and sick attendants of the bakery columns, bearer companies, and field hospitals, to be furnished by the Ersatz Reserve, leaving 73,032 as the actual requirements. The available trained *personnel* numbers only 59,595, so that the cavalry reserve and Landwehr will have to be drawn upon to a considerable extent.

(h.) *Medical Officers.*

A serious deficiency of medical officers appears to exist. The number required is 7,602, while the establishment of the active Army is 1,777, and the number of reserve and 1st Ban of the Landwehr medical officers is 2,676, giving a total of 4,453 only, or nearly 3,150 under the number required. Volunteer aid would probably be largely offered in a war, and we may reckon on about 600 medical officers of the 2nd Ban of the Landwehr, but even then the deficiency would appear to be very great.

D. SUMMARY.

To sum up, it appears that between the first and fifth days of mobilisation the cavalry divisions with their horse batteries can be entrained and started for the frontier, that from the sixth day the transport of the infantry, pioneers, and part of the trains can begin, the artillery being ready to move on the eighth, and the rest of the trains on the tenth day. On the eighth or ninth day the transport to the frontier of the new 4th Battalions can begin, and on the tenth that of the first of the reserve formations.

The war requirements of the Army are 48,122 officers and 2,165,950 men. To meet these there are available 19,262 officers of the standing army, 15,384 of the reserve and 1st Ban of the Landwehr, and an estimated number of 4,652 of the 2nd Ban of the Landwehr, leaving a deficiency of 8,824, of which 3,202 vacancies will doubtless be filled by sergeant-major-lieutenants, and 5,622 will have to be filled by promotions or acting appointments. From the 2,165,950 men required must be deducted 83,072 tradesmen supplied by the Landsturm, leaving 2,082,878 men required against the 2,228,753 men shown as available at page 62.

CHAPTER XXI.

THE ARMY IN THE FIELD.

A. IMPERIAL HEADQUARTERS.

THE German Army in the Field is the Nation in Arms—*Das Volk in Waffen*—and consequently the Emperor takes the field at the head of it as Commander-in-Chief. His Staff comprises the following elements :—

- (a.) The Personal Staff.
- (b.) The Military Cabinet.
- (c.) The Imperial Aides-de-Camp (*Adjutantur*).
- (d.) The Great General Staff.
- (e.) The War Minister.
- (f.) The Inspector-General of Field Artillery.
- (g.) The Inspector-General of Foot Artillery.
- (h.) The Inspector-General of Engineers.
- (i.) The Inspector-General of Lines of Communication and Railways.
- (k.) The Commandant at Imperial Headquarters.
- (l.) A Staff Guard with a Provision Column.
- (m.) A detachment of the Body Guard Gendarmerie.
- (n.) A field Intendance for Imperial Headquarters.
- (o.) A field Post Office.
- (p.) A detachment of the Mounted Courier Corps.
- (q.) The Political Police.

(a.) *The Personal Staff.*

In 1870-71 the Emperor was accompanied by a certain number of German Princes, 7 high court officials, 3 superior and 89 inferior court employés, with 20 train soldiers, 95 horses of the royal stables, 20 train horses, and 30 carriages. The Imperial Chancellor, with his office and the Civil Cabinet, also accompanied headquarters.

(b.) *The Military Cabinet.*

One of the Imperial Aides-de-Camp General is head of this branch, which continues in war its functions of superintendence of the promotions, &c., among officers. Under him are 4 officers, 7 employés, and 28 train soldiers, with 3 4-horsed and 3 2-horsed carriages. The number of riding horses is 20 to 25.

(c.) *The Imperial Aides-de-Camp.*

In 1870-71, 4 Aides-de-Camp General and 7 Wing Aides-de-Camp, with about 52 riding horses and 37 train soldiers accompanied headquarters. Their baggage is transported on the carriages of the court.

(d.) The Great General Staff.

At the head of the Great General Staff is the Chief of the General Staff of the Army, who has two adjutants; the Staff is composed of 1 quartermaster-general, 12 officers of the General Staff, of whom 6 are field officers (three being heads of sections) and 6 captains, 10 topographers and employés, and 5 clerks. To the Great General Staff are attached 4 staff guards (one an under-officer) and 58 train soldiers. The total number of riding and draught horses is 115, and the transport is composed of 4 4-horsed and 7 2-horsed wagons.

The Chief of the Great General Staff has the superior strategic direction of the whole Army in the Field in his hands, and submits all orders or directions for the various Armies, &c., for the Emperor's sanction. His first assistant is the Quartermaster-General, whose functions are not clearly defined, but who should be the *alter ego* of the Chief of the Staff, and who is the habitual channel of communication between him and the Inspector-General of Lines of Communication and Railways. He also superintends all sections generally and relieves the Chief of the Staff of all details.

There are no regulations laying down the duties of the officers of the Great General Staff, but in 1870 it was divided into three sections: the 1st in charge of operations and the distribution of the troops; the 2nd, superintending the lines of communication; and the 3rd forming the Intelligence Department. Since then, however, the post of Inspector-General of Lines of Communication and Railways has been created, and according to Cardinal von Widdern the three chiefs of sections will be employed in settling all questions relating to a special Army or to Armies operating in the same theatre of war, and the other nine General Staff Officers will be distributed among the sections as required. Each section will collect all information as to the Armies detailed to it and the forces opposing them, and will be able to give all the required information to the Chief of the Staff. A General Order,* dated Mainz, 3rd August, 1870, regulated in that campaign the relations between the Imperial Headquarters and those of Armies. It ran as follows:—

“In order to ensure uniformity in the transaction of business between the Headquarter Staff of Armies and the Royal Headquarters, it is necessary:—

“(1.) That every Army Headquarter Staff should not only report immediately by telegraph all important occurrences, but, even if nothing fresh has happened, should communicate to this office at least twice daily (as a rule in the morning and afternoon) any changes in the headquarters of the Armies, of the Army Corps, or of the Cavalry Divisions.

* Official Account, Vol. I, Part I, Appendix, page 83.

"(2.) That every official letter should, in addition to the date, have the hour of despatch marked upon it.

"(3.) That in all correspondence, whether by telegram or letter, in reference to despatches or letters emanating from this office, the journal number of the despatch or letter should always be quoted.

(Signed) "v. PODBIELSKI."

Cardinal von Widdern (Part I, page 5) writes that in 1870-71 three points were always observed in the issuing of orders from Royal Headquarters: (1) not to give too many orders and always to give general orders, so as to leave to those commanding on the spot and knowing all the circumstances as much power of initiative as possible; (2) not to give precise dispositions for the Armies, but all the more to keep their commanders thoroughly well acquainted with the news of the enemy, the action expected of them, and the reasons for the instructions sent; (3) to require constant and regular reports of all changes and measures adopted.

In special cases, General Staff Officers are sent from Imperial Headquarters to those of Armies to explain orders and acquaint their commanders with the views held at and the intention of Imperial Headquarters.

(e.) *The War Ministry.*

The War Minister is accompanied by 2 adjutants, 4 officers, and 8 officials of the Ministry. He is generally present when the Chief of the General Staff makes his report to the Emperor, and at once prescribes to the War Department the measures necessary for carrying out the Imperial orders. To the War Ministry are attached a mounted staff guard of 1 under-officer and 3 men and 33 train soldiers, with 4 4-horsed and 3 2-horsed carriages, and 22 draught horses. The number of officers' riding horses is 24.

(f, g, h.) *The Inspectors-General of Field and Foot Artillery and of Engineers.*

Each of these general officers is accompanied by 2 adjutants and 2 clerks, with 11 train soldiers, 1 4-horsed carriage, and 4 draught horses. The number of officers' riding horses is 12.

(i.) *The Inspector-General of Lines of Communication and Railways.*

This officer is a general officer of high rank, whose duties are to superintend the military administration of occupied portions of the enemy's territory, the formation of magazines, hospitals, and depôts, the creation of lines of communication and the

establishment of posts for their security, the surveillance of the occupied country by garrisons and flying columns, and the organization and regulation of the convoy, escort, and railway services. He has the powers of an Army Corps Commander, and under him are the following Departments:—

(1.) *Direction of Lines of Communication.*—1 Chief of the Staff, 2 adjutants (one captain, one lieutenant), 2 officials of the Judge-Advocate's Department, 3 under-officers as clerks, 17 train soldiers, 31 horses (including ten draught horses), 1 4-horsed baggage wagon for the Inspector-General, 1 4-horsed wagon for the Chief of the Staff, and 1 2-horsed wagon for the officials.

(2.) *The Chief of the Field Railway Service*, who superintends the railway service in the theatre of war, and the transport of troops on the home lines. His staff consists of:—1 field officer and 1 captain of the General Staff, 6 railway officials (two engineers and four clerks), 13 train soldiers, 22 horses (including eight draught horses), and 4 2-horsed wagons (three for baggage and one for office books).

He is accompanied by the staff of the Railway Regiment, composed of 1 field officer, 1 lieutenant as adjutant, 1 under-officer as clerk, 5 train soldiers, 10 horses (two draught), and a 2-horsed baggage wagon, and by the staff and the available officers of the Bavarian Railway Battalion.

The railway engineer officials, whose number may be increased as required, may be detached to superintend technical works. The Commander of the Railway Regiment is the channel through which the chief of the railway service sends his orders for all works to be executed by the branches of the regiment.

(3.) *The Intendant-General* (see Chapter XXIII), a general officer with a staff of 1 lieutenant (adjutant), 1 intendance councillor, 3 intendance secretaries, 2 assistant-secretaries, and 19 train soldiers, with 20 riding and 14 draught horses, and 1 4-horsed baggage, 2 4-horsed office, and 1 2-horsed baggage wagons.

(4.) *The Surgeon-General of the Armies* (see Chapter XXIII), with a staff of 1 deputy surgeon-general, 1 assistant-surgeon, 4 hospital assistants, and 4 train soldiers, with 5 riding and 2 draught horses and a 2-horsed baggage wagon.

(5.) *The Chief of the Military Telegraphs*, a field officer with a staff of 1 telegraph clerk and 3 train soldiers, with 4 riding and 2 draught horses and 1 2-horsed baggage wagon. (When the Director-General of Telegraphs assumes also the functions of chief of this branch, the *personnel* is augmented by 1 telegraph clerk, 1 train soldier, 1 riding and 2 draught horses, and a baggage wagon.) The Chief of the Military Telegraphs directs, through Army Commanders and the Director of Telegraphs on the lines of communication, the whole telegraph service in the field, but is subordinated to the Great General Staff for actual field telegraphs.

(6.) *The Field Postmaster-General*, with 2 chief inspectors, 4 postal clerks, 1 field postman, 8 train soldiers, 10 riding and 4 draught horses, and 1 baggage and 1 material wagon, superintends generally the Postal Service of the Army in the Field.

(k.) *The Commandant at Imperial Headquarters.*

This officer, a field officer of cavalry, is in charge of the Military Police and discipline of Imperial Headquarters. The Staff Guard, Body Guard Gendarmerie, and the provision column are under him. He has a lieutenant as adjutant and 3 train soldiers, with 3 officers' and 2 draught horses, and a 2-horsed baggage wagon.

(l. and m.) *Staff Guards, Body Guard Gendarmerie, and Provision Column.*

The duties of the mounted Staff Guards are to furnish orderlies, those of the dismounted portion are to supply guards over the offices and carriages of Headquarters. The Mounted Guard is composed of 1 captain, 4 lieutenants, 180 non-commissioned officers and men, and 5 officers' servants, with 195 horses; the Foot Guard consists of 1 captain, 3 lieutenants, 250 non-commissioned officers and men, 1 hospital-assistant, and 1 officer's servant, with 2 horses. These figures include the orderlies attached to the Great General Staff and War Ministry. The field strength of the Body Guard Gendarmerie is not laid down, but it may be taken at the peace strength of 1 lieutenant, 24 men, and 27 horses. The Provision Column comprises 2 under-officers and 22 men of the train, with 8 4-horsed and 2 2-horsed wagons and 38 horses. The two latter wagons are probably baggage wagons for the Staff Guards, but it is not so stated.

(n. and o.) *Field Intendance and Field Post Office.*

The establishments of these offices are unpublished, but to them would be attached 1 under-officer and 34 men of the train with 3 4-horsed and 6 2-horsed carriages, and 24 horses. To these may be added about 40 train soldiers as servants for Princes who may be expected to join Headquarters.

(p.) *Mounted Courier Corps.*

In 1870, the detachment consisted of 10 lieutenants, 10 officers' servants, and 30 horses.

(q.) *The Political Police.*

This consisted in 1870 of 1 official, 3 police officers, 3 train drivers, 6 horses, 2 carriages, and 8 field gendarmes.

Excluding the personal staff and the political police, the

total sum of the various branches under (b) to (p), as far as is given above is:—

81 Officers.
 3 Medical officers.
 53 Officials.
 945 N.-C. officers and men.
 725 horses.
 32 2-horsed carriages.
 30 4-horsed carriages.

B. HEADQUARTERS OF ARMIES.

The Army in the Field is divided into a certain number of Armies, probably four, if the whole Army is operating in one theatre of war. Each Army would be composed of 4 to 5 Army Corps, 2 to 3 Cavalry Divisions, and eventually a variable number of Reserve and Landwehr Divisions. The Commander of an Army would be a Field-Marshal or General, and would have no personal aides-de-camp, unless he were a Prince of a royal or reigning house. His Staff would be composed of the following branches:—

- (a.) The General Staff.
- (b.) The Staff Adjutants.
- (c.) The officer commanding the artillery.
- (d.) The officer commanding the engineers.
- (e.) The Intendant of the Army.
- (f.) The Surgeon-General of the Army.
- (g.) The Judge-Advocate-General of the Army.
- (h.) The Commandant at Headquarters.
- (i.) The Staff Guards with a Provision Column.
- (k.) A detachment of Field Gendarmerie.
- (l.) A Field Post Office.
- (m.) A detachment of the Courier Corps.

Under the Commander of an Army is also the Inspector of the Line of Communication by which his Army is supplied, but the latter is also under the orders of the Inspector General of Lines of Communication.

(a.) *The General Staff.*

At the head of the General Staff is a general officer as Chief of the General Staff, with a colonel as Quartermaster-General (*Ober-Quartiermeister*) and 6 officers of the General Staff under him. The duties of the Chief of the General Staff and of the Quartermaster-General are, within their own spheres of action, the same as those of the corresponding officers at Imperial Headquarters. The officers of the General Staff make dispositions for marches, actions, and the distribution of the troops, draw up reports upon operations, and correspond on those subjects with Imperial Headquarters. They gather all information concerning the enemy and the roads and other communications, &c., of the theatre of war, and deal with all questions concerning railways, telegraphs, and lines of communication. One officer is selected for his powers of work and capability

of expressing his ideas tersely, to draw up all the orders issued from Headquarters, and another to superintend and give information to newspaper correspondents. Outside the office, General Staff officers conduct reconnaissances, and are employed to carry orders when such have to be accompanied by verbal explanations, or when mistakes have to be corrected, or when the execution of the order has to be watched.

(b.) The Staff Adjutants.

Six adjutants are attached to Army Headquarters. Their duties have reference to changes in the order of battle, promotion and personal affairs of officers, petitions, proposals for rewards or decorations, discipline, returns of strength and of losses, replacement of losses in men, horses, and material, and personal matters relating to non-commissioned officers and men. One adjutant superintends the billeting of the Staff. Outside the office their duties are similar to those of the General Staff. A number of orderly officers, generally taken from the cavalry and chosen for their energy, powers of enduring fatigue, and knowledge of the language of the country, are attached to Headquarters for the purpose of carrying orders.

To the Commander of the Army, the General Staff, and the Staff Adjutants are attached 7 clerks and 49 train soldiers, with 20 draught and about 70 officers' horses, and 4 2-horsed and 3 4-horsed baggage wagons.

The Issue of Orders, &c.

Army Headquarters keep up communication with Imperial Headquarters by means of the telegraph, the field post, and cavalry relay posts. Frequently officers of the General Staff are sent to explain verbally the views held by the Army Commander, or other matters.

The orders of the Army Commander are issued to those of Army Corps and Cavalry Divisions in the form of Army Orders (*Armeebefehle*), or, in the case of operations, of Directives (*Direktiven*), the latter concerning marches, concentrations, occupation of positions, or an attack on a hostile position. As a rule these Directives only give the results to be attained and the general points to be borne in mind, leaving free scope for the initiative of the subordinate commanders as to how they are to be executed. If time allows, proposals as to how an operation is to be carried out may be called for from subordinate commanders. If fractions of the Army are detached for special operations, their commanders are provided with instructions, which may be supplemented by verbal explanations. Such instructions are also given to Inspectors of Lines of Communication and the commanders of Cavalry Divisions covering the front of the Army.

As far as circumstances allow, orders are given out daily at

a fixed hour, the Army Corps, independent Divisions, &c., sending General Staff officers, staff adjutants, or orderly officers to receive them. Cardinal von Widdern (Part I, page 24) gives the following account of the procedure followed in the IIIrd Army in 1870-71:—"Even when the Army was marching day after day, and Headquarters and the staffs of Army Corps, &c., were daily changing their quarters, orders were given out daily, usually at 1 o'clock. The officers sent to receive orders had to arrive some hours before, and hand over at once the correspondence they had brought with them. There was then hardly time to get the horses fed by the Staff Guard from the oats brought on the saddle. At 1 o'clock the Chief of the General Staff assembled all the officers in the presence of the Quartermaster-General, and handed to them Army orders and any other correspondence. Each separate representative of a staff had then to narrate shortly, so that all present could hear him, the occurrences in the unit concerned in the last 24 hours. After that, the Chief of the General Staff usually said a few words on the general situation, in so far as it had been modified in the previous 24 hours, which were taken down in the pocket-books, and finally, if circumstances did not appear to demand written orders, he dictated to each officer individually any notes or orders he had to give. In the same way the Quartermaster-General issued orders as to details within his province. H.R.H. the Crown Prince was present at the issue of orders, and whenever the importance of the correspondence or reports laid before him by the Chief of the General Staff seemed to require it, he received the officers concerned for a personal report. Frequently also the Chief of the General Staff received the bearers of important despatches on their arrival, and before the issue of orders, and questioned them on the subject. Immediately after the letter-bags had been closed, the officers mounted again, and had to ride the 15 to 20 miles they had traversed in the morning over again. If Corps Headquarters had moved, they had to follow, and in any case, however long the road might be, and however tired the horses, had to be punctually back, for at 5 o'clock Corps Orders were issued."

(c.) *The Officer Commanding the Artillery.*

The Commander of the Artillery of an Army is a Lieutenant-General or Major-General (probably one of the Inspectors of Field Artillery), who has a Staff of 1 field officer and 2 adjutants, with 2 clerks, 11 train drivers, 2 draught and about 18 officers' horses, and a 2-horsed baggage-wagon. The Commander of the Artillery has no direct power over the troops, and only takes command when the artillery of two or more corps has to be directed for a common object. His main duty is to keep the material of the artillery complete and in good order, and to ensure the supply of ammunition for all arms. He is under the direct orders of the Army Commander,

and has to keep up close relations with the Chief of the General Staff. He may be called on to prepare plans for the attack of fortresses.

(d.) *The Officer Commanding the Engineers.*

The Officer Commanding the Engineers of an Army would probably be one of the Inspectors of Engineers or Pioneers, and would have the same Staff as the Commander of the Artillery. He is responsible for the material of all pioneer formations being in good order, and if any engineering work on a large scale is being done, necessitating the employment of the pioneers of several Army Corps, he would take charge.

(e.) *The Intendant of the Army.*

The Intendant of an Army (see Chapter XXIII) is assisted by a field intendant and by several (about 6) intendance officials, with 11 train soldiers, 3 2-horsed wagons, and 6 draught and about 16 riding horses. To Army Headquarters is also attached a Field Supply Office, the composition of which is not published, but which is probably of the same composition as that of an Army Corps, viz., 6 officials, 7 train drivers, 12 horses, and 1 2-horsed wagon.

(f.) *The Surgeon-General of the Army.*

This officer (see Chapter XXIII) is accompanied by 2 or 3 medical officers, with 2 clerks, 4 train drivers, 3 to 5 officers' and 2 draught horses, and a 2-horsed baggage wagon containing a medical canteen.

(g.) *The Judge Advocate-General of the Army.*

This official has 2 train drivers with 2 officers' and 2 draught horses and a 2-horsed wagon.

(h.) *The Commandant at Headquarters.*

A field officer or captain of cavalry, with 5 train soldiers, 3 officers' horses, 2 draught horses, and a 2-horsed baggage wagon.

(i.) *Staff Guards and Provision Column.*

The Mounted Staff Guard is composed of 1 officer, 3 under-officers, and 16 men, with 22 horses and 3 train soldiers; the Foot Guard consists of 4 under-officers and 24 men. The Provision Column has 1 under-officer and 9 train drivers, with 1 2-horsed and 4 4-horsed wagons, and 19 horses.

(k.) Field Gendarmerie Detachment.

The men for this are taken from those detailed for the line of communication. A sergeant-major is in command of them, with one soldier servant.

(l.) The Field Post Office.

The Field Post Office is directly under the Quartermaster-General. It employs a few officials, with 3 train soldiers, a 2-horsed baggage wagon, and 2 2-horsed postal carriages.

(m.) Couriers.

Three officers are attached to each Army Headquarters, with 9 horses and 3 officers' servants.

So far as the above data go, and they are incomplete or uncertain in several branches, the total strength of the Headquarters of an Army is—

28 Officers.
3 or 4 Medical officers.
15 Officials.
179 N.-C. officers and men.
210 horses.
17 2-horsed carriages.
7 4-horsed carriages.

Orderly officers are not included in these figures.

C. ARMY CORPS.

The German Army Corps on taking the field in war are composed nearly as they are in peace, except that it is believed that the 25th (Hessian) Division of the 11th, and one of the Divisions of the 15th Army Corps will be united into a 16th Army Corps (as the German Staff are understood to be opposed to having Army Corps of greater strength than at present), and that only one regiment of cavalry per division will remain with the corps, the remainder being formed into independent cavalry divisions. Foot artillery regiments do not accompany their Army Corps. Normally an Army Corps consists of two infantry divisions, a corps artillery, the ammunition columns, trains, and the auxiliary services. An infantry division comprises two infantry brigades, a divisional cavalry regiment, a field artillery regiment of six batteries (see Chapter VIII), one or two field pioneer companies, a divisional bridge train, and a bearer company. The composition of an infantry brigade is normally two regiments of three battalions, but several brigades may take the field with the three regiments they have in peace, or the brigade may comprise regiments with four battalions, or a rifle battalion may be attached to it. The normal strength of each unit only will be considered below.

(a.) The Brigade of Infantry.

The staff of an Infantry Brigade consists of a major-general or colonel commanding, with a lieutenant as brigade adjutant, an under-officer as clerk, 2 staff guards as orderlies, 6 officers' servants, 1 train driver, 10 officers' (6 for the brigade commander, 4 for his adjutant) and 2 troop riding and 2 draught horses, and a 2-horsed baggage wagon. With two regiments of infantry, of three battalions each, an Infantry Brigade therefore consists of—

WAR STRENGTH OF A BRIGADE OF INFANTRY.

Units.	Officers.	Medical officers.	Officials.	N.-C. Officers and Men.			Horses.	Carriages.
				Comb.	Non-Comb.	Total.		
Staff	2	..	..	3	7	10	14	1
Two regiments..	136	12	12	6,034	180	6,214	292	88
Totals	138	12	12	6,037	187	6,224	306	89

The number of men armed with rifles is 5,800.

(b.) The Infantry Division.

An Infantry Division is commanded by a lieutenant-general or major-general who has a staff of 1 field officer of the General Staff and 2 adjutants (a captain and a lieutenant). To the Staff are attached 2 under-officers as clerks, 2 train drivers, and 11 officers' servants (5 for the general, 2 for each of the others), with 20 officers' (8 for the general, 4 for each of the others) and 4 draught horses and 1 4-horsed baggage wagon, besides 1 under-officer and 3 men with 4 horses of the mounted and 2 under-officers and 6 men of the dismounted staff guard.

The auxiliary services attached to an Infantry Division comprise a divisional intendants, a divisional supply office (see Chapter XXIII), a principal medical officer (Chapter XXIII), a field post office, a judge-advocate's office, and a chaplain's department. The field post office has 1 head clerk and 4 clerks (officials ranking with officers), 3 receivers, 2 mounted postmen, and 2 drivers for post vans (subordinate officials), 5 officials' servants, and 1 train driver, with 8 riding and 6 draught horses, and 2 post vans and 1 baggage wagon. The judge-advocate has with him 1 registrar, 1 servant, and 1 train driver, 1 riding and 2 draught horses, and a 2-horsed baggage wagon. The chaplains' department comprises 2 chaplains, 2 sacristans, 2 servants for the chaplains, 2 train drivers, 2 riding and 4 draught horses, and 2 2-horsed baggage wagons. The total strength of the auxiliary services is—

Units.	Medical Officer.	Officials.	N.-C. Officers and Men.	Horses.	Carriages.
Divisional Intendence .. ..	..	6	8	15	2
Divisional Supply Office .. ..	..	10	9	12	1
Principal Medical Officer	1	..	2	2	..
Field Post Office .. ..	..	12	6	14	3
Judge-Advocate's Office .. ..	..	2	2	3	1
Chaplain's Department .. ..	..	4	4	6	2
Totals	1	34	31	52	9

The component parts of an Infantry Division are—

- 2 Brigades of Infantry.
- 1 Regiment of Cavalry (see Chapter VII).
- 1 Regiment of Artillery (see Chapter VIII).
- 1 Company of Pioneers (see Chapter X).
- 1 Divisional bridge train (see Chapter X).
- 1 Bearer Company (see Chapter XI).

The strength of an Infantry Division is therefore—

WAR STRENGTH OF AN INFANTRY DIVISION.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.	Other Carriages.
				Combatants.	Non-Combatants.	Total.			
Staff and Staff Guards ..	4	..	..	14	13	27	28	..	1
Auxiliary services .. ..	..	1	34	..	31	31	52	..	9
2 Infantry brigades	276	24	24	12,074	374	12,448	612	..	178
1 Cavalry regiment	23	3	4	602	66	668	743	..	15
1 Artillery regiment	36	5	9	979	76	1,055	942	36	81
1 Pioneer company	5	1	..	200	13	213	19	..	4
1 Divisional bridge train ..	2	..	..	..	52	52	88	..	14
1 Bearer company	3	7	2	..	239	239	47	..	13
Totals	349	41	73	13,869	864	14,733	2,531	36	315

To the above would be added in one Division of an Army Corps a rifle battalion or a second pioneer company. A Division has a fighting strength, excluding officers, of 11,600 rifles of Infantry and 195 of pioneers, 602 sabres (or 528 carbines), and 36 guns.

(c.) The Corps Artillery.

To the Corps Artillery, which, as stated in Chapter VIII, will probably consist in the normal Army Corps of a Staff, an *Abtheilung* of 3 field batteries, an *Abtheilung* of 2-horse batteries, and 2 *Abtheilungen* of columns with 6 artillery and 4 infantry

ammunition columns, there are attached a bearer company (Chapter XI), a divisional intendants, a corps-troops supply office (Chapter XXIII), a field post office, a judge-advocate's office, and a chaplains' department. The field post office has 2 clerks, 2 officials' servants, and 2 riding horses fewer than that attached to an Infantry Division; the judge-advocate's office is composed as in a Division; and the chaplains' department is of half the strength of that of a Division. Consequently the strength of the Corps Artillery is—

WAR STRENGTH OF CORPS ARTILLERY.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.	Other Carriages.
				Com-batants.	Non-Com-batants.	Total.			
Staff	2	1	1	3	8	11	14	..	1
Field <i>Abtheilung</i> ..	17	2	4	488	34	522	464	18	40
Horse <i>Abtheilung</i> ..	12	2	5	310	30	340	486	12	29
2 <i>Abtheilungen</i> of columns	34	4	10	..	1,794	1,794	1,858	..	264
Bearer company ..	3	7	2	..	239	239	47	..	13
Auxiliary services ..	..	..	28	..	23	23	43	..	8
Totals	68	16	50	801	2,128	2,929	2,912	30	355

(d.) *The Army Corps.*

An Army Corps is commanded by a general or lieutenant-general, who has a staff of a field officer of the General Staff as Chief of the General Staff, a field officer and 2 captains of the General Staff, and 4 staff adjutants (2 captains and 2 lieutenants). To them are attached 6 under-officers as clerks, 22 officers' servants (5 for the general, 3 for the Chief of the Staff, and 2 each for other officers), 5 train drivers, 42 officers' (8 for the general, 6 for the Chief of the Staff, and 4 each for others) and 10 draught horses, 1 4-horsed and 1 2-horsed wagons for the baggage of the general and adjutants, and 1 4-horsed wagon for the baggage of the General Staff officers and the office.

Under the Chief of the General Staff are the officers of the General Staff, the staff adjutants, the staff guards, the field gendarmerie, and the field post office. No regulations are laid down for the division of duties among the Staff Officers, but generally the General Staff work is divided among the three officers, the senior attending to all correspondence and writing relative to operations, marches, distribution of troops, actions, and the relay service, a second to all intelligence work, and the third to the drawing up of reports on operations, the diary of operations, the collation of the reports from divisions, correspondence with the lines of communication authorities, and the

supervision of war correspondents. The adjutants' duties are likewise divided into three sections. In the first, daily orders not concerning operations, personal affairs of officers, and remounting from the horse *depôt* are attended to; in the second, states, returns of effectives, lists of losses, replacement of losses in men, horses, and material, and personal affairs of non-commissioned officers and men; and in the third, the reception and guarding of prisoners of war. An adjutant is placed in charge of each of these sections, and the fourth attends to the billeting of the staff. A certain number of orderly officers is attached to the staff.

The Artillery of an Army Corps is commanded by a major-general or colonel, who has 2 lieutenants as adjutants. To him are attached 1 under-officer as clerk, 2 mounted staff guards, 8 officers' servants (4 for the general, 2 each for the others), and 1 train driver, with 14 officers' (6, 4, and 4 respectively) and 2 troop riding and 2 draught horses, and a 2-horsed baggage wagon. The Officer Commanding the Artillery accompanies the corps commander, and has all the artillery of the Army Corps under his orders, that attached to divisions being only under him, however, in technical matters, and when the whole artillery of the corps is massed for action. One of his chief duties is to take all measures for the timely replacement of material and ammunition in the batteries and columns.

The Engineers of an Army Corps are commanded by a field officer, the commander of the pioneer battalion of the corps, assisted by the battalion staff, as given in Chapter X, in which his duties are also described.

To each corps is attached a detachment of field gendarmerie, consisting of 1 captain, 1 sergeant-major, 34 under-officers, 17 lance-corporals, and 3 soldier servants, with 3 officers' and 52 troop riding horses, for the performance of military police duties within the *rayon* occupied by the corps.

The Staff Guard attached to the Corps Staff comprises a mounted detachment of 1 lieutenant, 2 under-officers, 18 men, and 2 officers' servants, with 3 officers' and 20 troop horses, and a foot detachment of 3 under-officers and 25 men, with 1 train driver, 2 draught horses, and 1 2-horsed baggage wagon. To the Staff Guard are also attached a paymaster and a chief veterinary surgeon, with 2 servants and 2 horses. The commander of the Staff Guard acts as commandant at headquarters.

The auxiliary services attached to Army Corps headquarters comprise an Army Corps intendance, a field treasury, an Army Corps supply office, a field bakery office, a principal medical office (Corps Surgeon-General, see Chapter XXIII), a central field post office, and a judge-advocate's office. The central field post office consists of 1 postmaster, 3 postal clerks (officials), 4 receivers, 4 mounted postmen, 3 drivers of post vans (subordinate officials), 4 officials' servants, and 2 train drivers, with 9 riding and 10 draught horses, 1 baggage wagon

(4-horsed), and 3 postal vans. The Judge-Advocate's office is the same as in a Division.

The total strength of the Staff and auxiliary services of an Army Corps is therefore as follows:—

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Carriages.
				Com- batants.	Non- combnts.	Total.		
Corps Commander, General } Staff, and Adjutants..	9	..	..	6	27	33	52	3
Artillery Staff	3	..	..	3	9	12	18	1
Engineer Staff	2	..	..	1	4	5	9	1
Field Gendarmerie Detach- ment	1	..	..	52	3	55	55	..
Staff Guard	1	..	2	48	5	53	27	1
Total Staff	16	..	2	110	48	158	161	6
Army Corps Intendance ..	..	..	10	..	14	14	25	3
Field Treasury .. ..	..	..	5	..	13	13	20	3
Army Corps Supply Office ..	..	..	6	..	7	7	12	1
Field Bakery Office .. ..	..	..	7	..	7	7	11	1
Surgeon-General's Office ..	..	3	1	..	7	7	8	1
Central Field Post Office ..	..	..	15	..	6	6	19	4
Judge-Advocate's Office ..	..	..	2	..	2	2	3	1
Total Auxiliary Services..	..	3	46	..	56	56	98	14

The component parts of a normal Army Corps are—

The Staff of the Army Corps.

The auxiliary services.

2 Divisions of Infantry.

1 Battalion of Rifles.

The Corps Artillery.

1 Field pioneer company.

1 Corps telegraph section.

The Trains (Chapters X and XI) and Hospitals (Chapter XXIII), viz.:—

Corps bridge train with pioneer detachment.

Staff of train battalion.

5 Provision columns.

5 Wagon park columns.

1 Field bakery column.

1 Horse depôt.

12 Field hospitals.

The strength of a normal Army Corps is therefore—

WAR STRENGTH OF A NORMAL ARMY CORPS.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.	Other carriages.
				Comb.	Non-comb.	Total.			
Staff, &c.	18	..	2	110	48	158	161	..	6
Auxiliary services .. ..	..	3	46	..	56	56	98	..	14
2 Infantry divisions ..	698	82	146	27,738	1,728	29,466	5,062	72	630
1 Rifle battalion	22	2	2	1,002	28	1,030	44	..	14
Corps artillery	68	16	50	801	2,128	2,929	2,912	80	355
1 Field pioneer company ..	5	1	..	200	13	213	19	..	4
1 Corps telegraph section..	4	1	9	90	47	137	76	..	14
Corps bridge train, &c. ..	5	1	2	61	129	190	225	..	33
Train battalion staff ..	2	4	..	..	17	17	24	..	5
5 Provision columns	10	..	10	..	570	570	835	..	160
5 Wagon-park columns ..	10	..	10	..	690	690	1,025	..	410
1 Field-bakery column ..	1	..	1	..	113	113	15	..	2
1 Horse dépôt	2	..	2	..	111	111	201	..	2
12 Field hospitals .. ..	..	60	48	..	564	564	384	..	72
Totals	843	170	328	30,002	6,242	36,246	11,081	102	1,721

The fighting strength of an Army Corps, exclusive of officers, is—

24,176 Rifles of infantry and rifles.
 646 Rifles of pioneers.
 1,204 Sabres (or 1,056 carbines).
 102 Guns.

D. THE CAVALRY DIVISIONS.

Nothing is laid down in recent German works as to the composition of the Cavalry Divisions, the "Field Service Regulations" only saying that a Cavalry Division "consists of Cavalry Brigades and Horse Artillery." At recent manoeuvres of cavalry it has been the practice, however, to form the divisions of 3 brigades, each of 2 regiments of cavalry, with 2 batteries of horse artillery attached to the division, and this may be taken as the normal strength.

The staff of a cavalry brigade is of the same strength as that of an infantry brigade, and the brigade will therefore be composed of—

WAR STRENGTH OF A CAVALRY BRIGADE.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Carriages.
				Combts.	Non-combts.	Total.		
Staff	2	..	..	3	7	10	14	1
Two regiments	46	6	8	1,204	132	1,336	1,486	30
Total	48	6	8	1,207	139	1,346	1,500	31

The staff of a cavalry division is the same as that of an infantry division, except that an engineer officer with 2 servants and 4 horses is attached in addition.

The auxiliary services with a cavalry division comprise a divisional intendants, a divisional supply office, and a judge-advocate's office, composed as in an infantry division, a field post office with 1 official, 1 servant, and 1 horse less than in an infantry division, and a chaplains' department of the same strength as in the corps artillery of an army corps.

The component parts of a normal Cavalry Division are—

The divisional staff,

The auxiliary services,

3 Cavalry Brigades,

2 Batteries of Horse Artillery,

2 Ammunition wagons (carbine ammunition) attached to the Horse Artillery (Chapter VII),

and the Division therefore numbers—

WAR STRENGTH OF A CAVALRY DIVISION.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.	Other Carriages.
				Comb.	Non-comb.	Total.			
Staff	5	..	..	14	15	29	32	..	1
Auxiliary services .. .. .	..	..	31	..	26	26	46	..	8
3 Cavalry brigades	144	18	24	3,621	417	4,038	4,500	..	93
2 Batteries horse art- tillery	10	..	4	308	20	328	472	12	28
2 Ammunition wagons .. .. .	..	..	..	..	7	7	13	..	2
Totals	159	18	59	3,943	485	4,428	5,063	12	132

The fighting strength, exclusive of officers, of a cavalry division, may be taken at 3,612 sabres or lances, and 12 guns.

If a cavalry division takes the field without waiting for its reserves, as stated in Chapter VII, *i.e.*, with 135 horses per squadron or 542 sabres or lances per regiment, leaving the remainder to follow as soon as possible, at the outset of a campaign it would only muster 3,152 sabres.

Possibly an *Abtheilung* staff may be formed for the two horse batteries, which would increase the division by 2 officers, 2 medical officers, 1 official, 2 combatant and 10 non-combatant (total 12) men, 14 horses, and 1 carriage.

E. FIELD RESERVE AND LANDWEHR DIVISIONS.

These divisions, formed of mobilised reserve (Landwehr) troops are composed in a similar manner to the Infantry

Divisions of the active army, but Landwehr Divisions will be somewhat weaker in artillery, and all will have a proportion of commissariat and medical formations and ammunition columns attached to them, as it is unlikely that they will be formed into Army Corps.

Assuming that the Reserve or Landwehr Infantry Regiments are composed of 4 battalions, though some may have fewer and others more, the strength of a Reserve or Landwehr Infantry Brigade (staff as in an Infantry brigade), will be as follows:—

WAR STRENGTH OF A RESERVE OR LANDWEHR INFANTRY BRIGADE.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Carriages.
				Comb.	Non-comb.	Total.		
Staff	2	..	..	3	7	10	14	1
2 Reserve or Landwehr regiments	180	16	16	6,418	236	6,654	376	92
Totals	182	16	16	6,421	243	6,664	390	93

The fighting strength would be 6,208 rifles.

The Staff and auxiliary services of a Reserve or Landwehr Division would be of the same strength as those of an Infantry Division, and all other units of the division would have the same strength as those of the active Army. The strength of a Reserve Division is shown in the table opposite. That of a Landwehr Division would be less, as it would probably only have an *Abtheilung* of 4 batteries of field artillery, 2 squadrons of cavalry, no divisional bridge train, and only 1 artillery ammunition column. Under that supposition it would number:—

423 Officers,	
60 Medical officers,	
92 Officials,	
14,006 N.-C. officers and men, combatants	} 15,762,
1,756 " " non-combatants	
2,579 Horses,	
24 Guns,	
432 Carriages,	

with a fighting strength of 12,416 rifles of infantry, 195 rifles of pioneers, 300 sabres, and 24 guns.

WAR STRENGTH OF A RESERVE DIVISION.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.			Horses.	Guns.	Other Carriages.
				Comb.	Non-comb.	Total.			
Staff	4	..	..	14	13	27	28	..	1
Auxiliary services ..	..	1	34	..	31	31	52	..	9
2 Reserve infantry brigades ..	364	32	32	12,842	436	13,328	780	..	186
1 Reserve cavalry regiment ..	23	3	4	602	66	668	743	..	15
1 Reserve field artillery regiment of 6 batteries ..	36	5	9	979	76	1,055	942	36	81
1 Reserve pioneer company ..	5	1	..	200	13	213	19	..	4
1 Reserve divisional bridge train..	2	..	..	..	52	52	88	..	14
Staff of ammunition column <i>Abtheilung</i> ..	2	2	..	..	12	12	14	..	1
2 Reserve infantry ammunition cols. ..	6	..	2	..	348	348	354	..	50
2 Reserve artillery ammunition cols. ..	6	..	2	..	358	358	374	..	54
1 Reserve bearer company ..	3	7	2	..	239	239	47	..	13
3 Reserve field hospitals ..	..	15	12	..	141	141	96	..	18
2 Reserve provision columns ..	4	..	4	..	228	228	334	..	64
Totals	455	66	101	14,637	2,063	16,700	3,871	36	510

To a Reserve Division there might also be attached a Reserve Rifle Battalion.

The fighting strength of the normal division as given above, excluding officers, is 12,416 rifles of infantry, 195 rifles of pioneers, 602 sabres, and 36 guns.

F. SPECIAL FIELD FORMATIONS.

Under this heading may be included—

- (a.) The Field Ammunition Parks (*Feld-Munitions-Park*).
- (b.) The Central Ammunition Depôts (*Haupt-Munitions-Depôt*).
- (c.) The Engineer Siege Parks.

(a.) *The Field Ammunition Parks.*

On mobilisation there are formed 3 Prussian, 1 mixed Saxon and Württemberg, and 1 Bavarian *Abtheilungen* of field ammunition parks, each comprising two ammunition columns. These

are attached to the various Armies, and are pushed as far forward as possible by rail, and then move on by road to the points named where the ammunition columns of Army Corps are to assemble to replace expended ammunition. The *Abtheilungen* are under the General Commanding the Artillery of the Army, and they fill up from the Central Ammunition Depôts. To increase the means of transport of these columns, carriage is often requisitioned.

The staff of a Field Ammunition Park is composed of 1 captain commanding, 1 medical officer, 1 paymaster, 1 veterinary surgeon, 1 under-officer as clerk, 3 officers' servants, and 1 train driver, with 5 riding and 2 draught horses, and a 2-horsed baggage wagon.

Each column consists of 1 captain of artillery, 2 2nd lieutenants (generally of the cavalry reserve), 1 sergeant-major artificer, 1 sergeant-major, 1 vice-sergeant-major, 4 sergeants, 2 sergeant-artificers, 7 under-officers, 3 bombardiers, 8 acting bombardiers, 2 trumpeters, 60 gunners, 1 hospital assistant, 1 saddler (official), 1 farrier, and 71 drivers and officers' servants, with 21 riding and 122 draught horses, 17 ammunition wagons (6-horsed), 2 battery store wagons (4-horsed), and 1 field forge (6-horsed).

The total strength of a field ammunition park *Abtheilung* is therefore—

8 Officers.
1 Medical officer.
4 Officials.
329 N.-C. officers and men.
293 Horses.
41 Carriages.

Of the 17 ammunition wagons of each column, 9 are loaded with 9-cm. gun ammunition, 2 with that for 8-cm. guns, and 6 with infantry, &c. ammunition. The total amount of ammunition which can be carried by each column is: for 9-cm. guns 1,750 common shell, 1,338 shrapnel, 192 case shot; for 8-cm. guns, 450 common shell, 354 shrapnel, 60 case shot; 584,140 rounds of infantry, and 9,360 of revolver ammunition; 3,286·8 lbs. of powder and gun-cotton. On the carriages are carried 2 axes, 20 hatchets, 20 pickaxes, and 20 shovels.

(b.) *Central Ammunition Depôts.*

One of these is mobilised for each Army, four in all being provided for, which would be mobilised at Torgau, Magdeburg, Erfurt, and in Bavaria (probably Ingolstadt).

These depôts are at the disposal of the Inspector-General of Lines of Communication and Railways, and once established are rarely moved, sending their ammunition (which they draw from the home depôts) by rail in boxes to the terminal station of the lines of communication, where it is taken over either by the columns of the field ammunition parks, or directly by those attached to Army Corps. The *personnel* of each would be

2 artillery officers, 1 lieutenant of the Ordnance Corps, 1 sergeant-major artificer, 84 non-commissioned officers and men, and 2 horses.

(c.) *Engineer Siege Parks.*

The number of tools forming the material of an Engineer Siege Park is, according to Buschbeck-Helldorf—

10,000 Shovels.	
5,000 Pickaxes.	
11,000 Yards of tracing tape.	
200 Axes.	
1,000 Hatchets.	
200 Saws.	
1,000 Billhooks.	
Tools for 16 to 24 mine-heads, &c.	
„ 20 Carpenters ..	} For repairing shops.
„ 5 Wheelwrights ..	
„ 5 Joiners ..	
„ 10 Smiths ..	
„ 10 Locksmiths ..	
„ 2 Tinsmiths ..	

The *personnel* would be furnished by the pioneers detailed to take part in the siege, and the staffs, in number varying according to the importance of the place attacked, by the engineer staff.

G. THE LOCAL (REPRESENTATIVE) STAFFS AT HOME.

Though not a portion of the Army in the Field, it seems to be the place here to indicate the composition of the representative staff left at home when the active troops take the field.

In each Army Corps district there is formed a representative staff composed of a general officer commanding, 2 adjutants, 4 under-officers as clerks, 2 medical officers, 1 judge-advocate and 1 chaplain, with 6 horses. The officers are taken from the reserve or Landwehr or those “at disposal.” The General Officer commands all the non-mobile troops in his district, superintends the instruction of the *depôt* troops and the formation of garrison troops, and is invested with the same powers as the Army Corps Commander he replaces. When a province is declared to be under martial law, he assumes the functions of Military Governor as long as no Commander of a mobile Army Corps with a portion of his corps is in the province.

Representative Staffs of 1 general or field officer, 2 adjutants, and 2 clerks, with 4 horses are formed in each Brigade District to superintend recruiting, pensioning, and the instruction of the *depôt* troops. In the Guard Corps, in place of these, there is formed an Inspection of Infantry of the Guard.

In each Army Corps an Inspector of *Depôt* Squadrons (field officer) is appointed, with a staff of 1 adjutant and 1 clerk, with 3 horses. He superintends the instruction of the *depôt* squadrons and the formation of new units.

The Artillery *Dépôt* formations are for discipline directly under the representative Corps Commander, but for matters concerning the replacement of losses in the active troops they are under the Commander of the Artillery of the active Army Corps. Special Staffs are formed for artillery *dépôts* in Bavaria.

In each Corps District an Intendance with 1 intendant, 3 councillors, 1 assessor, and 17 officials and employés is formed.

All the local staffs and establishments, such as Landwehr battalion district, town, and fortress staffs, and the artillery, train, and remount establishments and *dépôts*, magazines, hospitals, and garrison and hospital administrations, continue at their work in war as in peace, as do also the War Ministry, and the inspections of artillery, engineers, pioneers, rifles, and train. Any inspectors ordered to join the mobile army have representatives appointed for them.

The War Academy, Artillery and Engineer School, War Schools, Instructional Battalion, Gymnastic Institute, School of Musketry, Military Riding Establishment, School of Gunnery, and Artificers' School are broken up on mobilisation.

The Great General Staff is replaced by a representative Staff, and a Central War Treasury is formed at Berlin, the General Military Treasury continuing to administer the finances of the unmobilised troops, &c., but closing up its peace accounts and opening new ones based on the war establishments. The Central War Treasury has, as its branches with the Army in the Field, the Corps Field Treasuries and those with the Inspections of Lines of Communication, and corresponds with the branch treasuries in the various States. Funds are sent from it to the Field Treasuries either in cash or in orders on the Treasuries of the nearest States of the Empire.

CHAPTER XXII.

THE LINES OF COMMUNICATION AND RAILWAY SERVICES IN WAR.

AT the head of all branches connected with the Lines of Communication and the Railway Service in War is the Inspector-General of Lines of Communication and Railways, a member of Imperial Headquarters, whose duties and the composition of whose Staff are shown in Chapter XXI. In 1870 the lines of communication and railway services were more or less united, but the experience of that war has shown that the amount of work necessary to supervise both was too great, and consequently a sharp distinction has been drawn between them on

the various lines of communication, both services having only a common head at Imperial Headquarters.

A. THE LINES OF COMMUNICATION.

As a rule, for each Army there is organised a line of communications by road, rail, or water, and at the head of it is placed a General Officer as Inspector of the Lines of Communication with the powers of an Army Corps Commander. He is partly under the orders of the Inspector-General of Lines of Communication and Railways and partly under those of the Commander of the Army to which his line belongs, and his general duties are to provide, in the *rayon* assigned to him from Imperial Headquarters and to the right and left of the line of communications, for the establishment of communications, to regulate the transport service by road or water, to provide for the security of the lines of rail and the trains on them, to periodically inspect his line, to construct fortifications or fortified posts where such are required, and, in general, to conform to the instructions of the Inspector-General. Army Commanders keep their Inspector of Lines of Communication fully informed of all movements of troops and even of proposed operations, and he does all he can to keep up intimate relations with Army Headquarters, to inform them of all changes in the Line of Communications, and to foresee probable requirements and be prepared to meet them. The departments of his Staff are—

- (a.) The Staff of the Inspector,
- (b.) The Gendarmerie.
- (c.) The Intendance.
- (d.) The Medical Department.
- (e.) The Judge-Advocate's Department.
- (f.) The Pay Department.
- (g.) The Veterinary Department.
- (h.) The Telegraph Department.
- (i.) The Postal Department.
- (k.) The Civil Department.
- (l.) The Station Commandants.

(a.) *The Staff of the Inspector.*

The Staff consists of a Field Officer of the General Staff, a Captain of Artillery, a Captain of Engineers, a Lieutenant as Adjutant, and an officer as commander of train troops. To it are attached 3 under-officers as clerks, a mounted Staff Guard of 1 under-officer and 4 men, a foot Staff Guard of 1 under-officer and 12 men, 3 farriers, 4 train drivers, and 9 officers' servants, with 29 horses and 2 4-horsed baggage wagons.*

The Chief of the Staff superintends all duties and gives out orders upon the Inspector's instructions. The three other

* To these are added, for an army in which the Bavarian troops are serving, 1 captain, 1 under-officer as clerk, 1 intendance official, 1 veterinary surgeon, and 1 post inspector from the Bavarian Army, with 2 train drivers, 3 officers' servants, and 9 horses.

officers are heads of three sections, whose duties are as follows:—1st Section (artillery officer), intelligence work, arms and ammunition, organisation of transport, employment of the troops, formation of Station Commandants; 2nd Section (engineer officer), distribution of troops of the Army, transport of troops and prisoners, construction and repair of bridges, roads, and fortifications, supply of material of war, convalescents, personal affairs of members of the Inspection, reports and returns; 3rd Section (adjutant), personal duties with the Inspector, interior economy and duties, receipt and issue of orders, horse dépôts, remounting. A special *personnel* of civil engineers of roads, canals, and bridges is placed under the 2nd Section.

(b.) *The Gendarmerie.*

The Gendarmerie is commanded by a captain, who is under the Chief of the Staff, and whose duty it is to superintend all military police arrangements in the *rayon* of the Inspection; he has at his disposal a sergeant-major, 3 soldier servants, and 1 train driver, with 6 horses (2 draught), and 1 baggage wagon, besides as many times 21 mounted field gendarmes as the Army contains Army Corps.

(c.) *The Intendance.*

The Intendance is composed of 24 officials (1 intendant, 1 intendance councillor, 2 intendance secretaries, 2 registrars, 1 assistant registrar, 1 principal magazine accountant, 2 accountants and 2 controllers of magazines, 8 magazine clerks, 1 paymaster, 1 cashier, 1 assistant cashier, 1 bookkeeper), 7 subordinate officials (6 storekeepers and 1 sub-assistant cashier), 1 under-officer and 34 train drivers (including servants), 54 horses, and 6 carriages (2 2-horsed baggage wagons, and 4 4-horsed wagons, 1 for office, 2 for the treasure chest, and 1 for the transport of the subordinate officials).

The duties of the Intendance are set forth in Chapter XXIII. At the disposal of each Intendance are placed a Lines of Communication Bakery Column consisting of 1 officer, 1 official, 120 men, 28 horses, and 5 carriages, with iron ovens (see Chapter XI), as many Lines of Communication Wagon-Park Columns (see Chapter XI) and as many Reserve Bakery Detachments as there are Army Corps in the Army,* and an Army Clothing Dépôt (see p. 328).

(d.) *The Medical Department.*

At the head of the Medical Department of an Inspection is a Surgeon-General, who has an assistant-surgeon as secretary

* The Guard Corps forms no Reserve Bakery Detachment. The strength of these detachments is not laid down, but may be taken as the same as that of a Field Bakery Column.

and a hospital assistant as clerk, besides 2 officers' servants, 1 train driver, 5 horses, and a 2-horsed baggage wagon.

At the disposal of the Surgeon-General are as many medical officers of superior rank, as Directors of Hospitals, as there are Army Corps in the Army, each of whom has 1 hospital assistant as clerk, 1 servant, and 2 horses.

Each Army Corps mobilises for the War Hospitals, 19 medical officers, 3 apothecaries, 6 other officials, 27 hospital assistants, 3 under-officers, 36 sick attendants, 24 train soldiers, and 3 cooks.

In each Inspection there is a Committee for the Transport of the Sick and Wounded, composed of 7 medical officers, with 6 hospital assistants, 9 sick attendants, and 7 officers' servants.

To replace medical and hospital stores, a hospital store dépôt is formed for each Inspection with a *personnel* of 2 officers, 12 officials, 12 under-officers, and 6 soldier servants, besides a transport column of 20 carriages, with 2 under-officers, 20 train drivers, and 42 horses.

The duties of the various branches of the Medical Department will be found in Chapter XXIII.

(e.) *The Judge-Advocate's Department.*

A Deputy Judge-Advocate superintends the judicial business of the Inspection, and has with him 1 registrar, 1 servant, 1 train driver, 2 draught horses, and 1 baggage wagon.

(f.) *The Pay Department.*

To each Inspection is attached a treasury, managed by a paymaster, who has an under-officer as clerk, a servant, and a riding horse. Payments are made under the authority of a committee composed of two staff officers and the paymaster. The pay department is superintended by the intendant of the inspection, and by it is paid the whole *personnel* of the inspection.

(g.) *The Veterinary Department.*

Veterinary duties in each inspection are superintended by a chief veterinary surgeon, who has with him 2 veterinary surgeons, 3 servants, and 3 horses. The chief veterinary surgeon is in veterinary charge of the horses of the staff and officials, of the transport columns attached to the inspection, and of the cattle sent up by the lines of communication. He proposes measures to prevent or check the spread of diseases, and inspects the dépôts of sick horses. These latter are formed by order of the inspector, and their *personnel* is composed of officers and men and civil veterinary surgeons drawn from home. They may also receive horses in good health, supernumerary to the establishment in regiments or home dépôts, or those captured from the enemy.

(h.) The Telegraph Department.

The Director of Telegraphs on a line of communication superintends, under the orders of the Chief of Military Telegraphs the construction, maintenance, and repair of the lines which connect the State telegraphs with the field telegraphs. He remains at headquarters of the inspector and has under his orders 3 inspectors, 10 linesmen, and 30 telegraph workmen, besides a train column composed of 1 lieutenant, 1 sergeant, 4 under-officers, 1 farrier, and 49 train soldiers (including 21 officers' &c., servants), with 65 (including 9 riding) horses, and 14 carriages (4 two-horsed carriages for the director and each of the inspectors, 4 two-horsed baggage wagons, and 6 six-horsed material wagons). This *personnel* is divided into three construction columns, each of 3 to 4 linesmen and 10 workmen, to each of which corresponds a section of train composed of two material wagons and one or two carriages for the officials. These again can be divided into two parties, each with a material wagon. Each direction has 32 Morse apparatus, materials for 80 miles of air-line and 2 miles of cable, and tools for 6 construction parties. The batteries used are Leclanché's of 10 elements.

(i.) The Postal Department.

Each Inspection has a Director of Posts who, under the orders of the Field Postmaster-General, superintends the whole postal service in it, and arranges for all correspondence being forwarded to the headquarters of Army Corps. He may be stationed either with army headquarters or with those of the inspection of lines of communication. He has at his disposal 3 inspectors, 30 clerks, 20 receivers, 1 postman, 5 train soldiers, 12 horses (4 draught), a carriage for himself, and a baggage wagon. A *dépôt* of post horses and carriages is also formed as a reserve in each inspection, consisting of 1 clerk, 1 veterinary surgeon, 10 receivers, 30 postmen, 1 soldier servant, 92 horses (2 riding), and 30 post vans (two-horsed).

(k.) The Civil Department.

This branch is composed of 1 civil and 1 police official with 3 train soldiers, 4 horses, and 2 carriages. The first named official is in charge of the civil administration of the occupied territory and is aided by the second. He has to study the temper of the people and report all suspicious circumstances, examine private correspondence, watch suspected individuals, superintend the local press, &c.

(l.) The Station Commandants.

In each Army Corps district, a town with an important railway station is chosen as the initial station of the lines of

communication (*Etappen-Anfangs-Ort*). Everything to be sent up to the corps from its district is concentrated at this place, and to it everything is sent from the corps, except sick and wounded, who are disposed of by the line commandants.

The station at which the traffic on any line of railway leading to the Armies stops is called the terminal station (*Etappen-Haupt-Ort*), and it advances as the Armies advance and fresh sections of the railway are opened for traffic. From this point, supplies, stores, and reinforcements are distributed to the various Army Corps, and at it are usually the headquarters of the Inspector of the Lines of Communication. Between these two stations, and from the terminal station to the front, are organized the lines of communication by road, rail, and water, and on them are the stations of the lines of communication (*Etappen-Ort*) on an average about 15 miles apart, in each of which a field officer or captain is appointed commandant, with an adjutant, 2 clerks, 2 servants, and 3 riding horses. The number of these stations varies of course with the length of the line; at the end of January 1871, the 1st German Army had 14, the IInd, 27, the IIIrd, 32, and the Maas Army 14 stations on its lines of communication. Each Army Corps (except the Guard) mobilises at first 3 such station *personnels*. The duty of a station commandant is to ensure the transit of everything and everybody going to and coming from the Army, to take measures for the security of the communications and telegraph lines, to furnish escorts for trains, convoys, &c., and to ensure the raising of contributions. He may not be superseded by an officer of superior rank passing through, and has the powers of a regimental commander. If necessary, a medical officer, a judge-advocate, and a chaplain may be added to the staff in important stations, besides a *personnel* for the magazines. When there is a railway station commandant in the same station he must work in concord with the station commandant.

General Governments.

When it is desired to make a methodical use of all the resources of an occupied country, General Governments are formed, with a staff of 1 general officer as Governor-General and 4 or 5 adjutants and staff officers, besides the necessary clerks, servants, &c. The Governors-General take over in their district part of the duties of the Inspectors of Lines of Communication, but the latter preserve their independence while working in co-operation. In 1870 there were formed general governments for Alsace, for Lorraine, at Rheims, and at Versailles.

Lines of Communication Troops.

In principle, the lines of communication are guarded by the troops of the active Army until the arrival of reserve or other troops detailed specially for this purpose. The number of the troops so employed will of course vary greatly with the length

of the lines to be guarded, the temper of the population, the nature of the country, &c. At the end of January, 1871, these troops consisted of 124½ battalions, 42 squadrons, 13 batteries, 39 companies of foot artillery, and 15 companies of fortress pioneers. A portion of them are under the direct orders of the Inspectors of Lines of Communication, another portion under those of Governors-General.

The total strength of the staff as given above under *a to l* of the lines of communication of an Army of five Army Corps, excluding bakeries, wagon park columns, clothing and hospital store depôts, and war hospital *personnel*, and with 15 stations on its line of communications is:—

38 Officers.
14 Medical officers.
180 Officials and employés.
349 N.-C. officers and men.
433 Horses.
59 Carriages.

B. THE RAILWAY SERVICE.

Before proceeding to study the organisation of the railway service in war, it is necessary to note the preparations made in peace for a systematic utilisation of all the resources of the various lines. To this effect there are appointed 14 "Commissioners of Lines of Rail," stationed at Hanover, Düsseldorf, Cassel, Sachsenhausen (near Frankfurt-on-Main), Dresden, Karlsruhe, Berlin, Cologne, Schwerin, Bromberg, Breslau, Königsberg, Würzburg, and Munich. The duty of those officers is to study the resources in *personnel* and rolling stock of the groups of lines in their district, termed their "line" (*Linie*), and the conditions under which traffic is carried on, and from the information thus gained to prepare plans for the transport of troops in the event of the mobilisation and concentration of the Army on any theatre of war. They have also to inspect the lines and see that the rolling stock is kept up to the establishment, and that all fittings required for military trains are kept on hand. Any deficiencies or irregularities and any suggested improvements must be notified to the Great General Staff (railway section), under which the Line Commissioners are placed. For the duties of the Railway Section, see Chapter XVIII. Yearly reports on the lines are sent in to it by the Commissioners, based on data furnished by the railway authorities, and officers are frequently sent to make reconnaissances of lines or stations.

The railway authorities are bound to keep ready at all times the fittings required for military trains, such as those necessary for transforming goods-wagons into wagons for horses or men, or passenger carriages into ambulance carriages, besides ramps and other means of loading trains, and the material necessary for organising halting and refreshment places for the troops. Every wagon is marked with the number of men or horses it can carry.

a. General Organisation.

On mobilisation being ordered, the Railway Section of the Great General Staff continues to control all transports on the home lines until the Inspector-General of Lines of Communication and Railways is appointed, when he takes over the general management of all railway lines. For railway duties he has under his orders :—

- (a.) The Chief of the Field Railway Service.
- (b.) The Military Directions of Railways.
- (c.) The Railway Section of the Great General Staff, as constituted in war.
- (d.) The Line Commandants.
- (e.) The Railway Station Commandants.

In respect of the railway service, the Inspector-General fixes the date when the ordinary traffic on home lines is to be suspended, and the military time table is to be taken into use.

The *Chief of the Field Railway Service*, whose staff is detailed in Chapter XXI, superintends all military traffic on home and occupied foreign lines and settles where the transfer stations are to be (page 327). In the theatre of war, if it be an occupied portion of the enemy's territory, one or more *Military Directions of Railways* are formed to work the lines taken over, under the orders of the Chief of the Field Railway Service. Their sphere of action usually begins at the transfer stations, even if home lines extend beyond those stations, and as a rule 300 miles of line is the utmost which would be placed under one direction.

Each Director of Railways (a field officer) has attached to him a captain as adjutant, a paymaster, 2 under-officers as clerks, 1 train driver, and 3 soldier servants, with 7 horses (2 draught) and a baggage wagon. The Director distributes duties among the various executive departments, pays particular attention to the organisation of halting and refreshment stations, and superintends the supply of all the *personnel* under him by the Intendance. Under him are an Intendance Department, a Transport Department (*Transport-Abtheilung*), a Traffic Department (*Betriebs-Abtheilung*), several traffic inspections (*Militär-Betriebs-Inspectionen*), and a certain number of units of Railway Troops (See Chapter X).

The Intendance of each Direction is composed of 20 officials, 7 subordinate officials, and about 25 train soldiers, with 36 (10 draught) horses and 4 carriages. The duties of the Intendance are the same as those of an Intendance of Lines of Communication, and the railway department must work hand in hand with the other Intendances concerned.

The transport section consists of a field officer as chief, a captain, a medical officer, 3 under-officers as clerks, 4 train soldiers, and 6 riding horses. The chief of this section regulates all transport by rail on the lines under the Director, and acts for the latter in case of absence. The medical officer is

his assistant in matters relative to the transport of the sick and wounded.

The traffic section is composed of a captain of railway troops as chief, with a captain and 2 lieutenants of railway troops as engineers of construction, traffic, and traction, and an administrative official. It is divided into four offices, viz.:—an administrative office with 18 railway clerks (non-commissioned officers), 1 printer, and 1 orderly (privates), a central technical office with 1 captain as inspector of works, and 6 non-commissioned officers, a treasury with 1 accountant (official), 2 book-keepers, and 1 orderly (non-commissioned officer) which settles all expenses incurred in the technical work of the direction, and a telegraph office with two telegraph officials. To the section are attached 10 train soldiers, 10 horses (8 draught), and 4 baggage wagons.

The traffic inspections have each to superintend the traffic and repairing and construction works on from 75 to 150 miles of line and are each composed of a captain as traffic inspector, a 1st lieutenant as first superintendent of works, 4 2nd lieutenants (1 as second superintendent of works, 1 as head of and 1 as assistant in the traction department, and 1 as controller of traffic), 14 non-commissioned officers (clerks, heads of gangs, draughtsmen, &c.), 8 train soldiers, 6 horses (4 draught), and 2 baggage wagons.

The *Railway Section of the Great General Staff* as constituted in war is under the Chief of the Field Railways, and it regulates the traffic on the home lines up to the transfer stations, but circumstances may arise in which its authority extends beyond those. The chief of the section distributes the transport of troops and stores among the various lines, and keeps in communication with the various representative staffs for this purpose. Under him are the Line Commandants, and at his disposal are placed two railway officials of high rank for technical duties.

The whole of the home railways are in war, as in peace, distributed into 14 lines, the Commissioners of which in peace become the *Line Commandants* on mobilisation, and have then placed at their disposal, a lieutenant as adjutant, a medical officer, a paymaster, 2 under-officers as clerks, and 3 soldier servants, besides 3 railway officials and 1 railway clerk. They are the channel through which the orders of the military authorities are conveyed to those of the railways, and under them are placed the *Railway Station Commandants*. They draw up the time tables, regulate the details, give orders for the provisional or permanent construction of loading stages, watering places, or crossing stations, and notify to the authorities of their lines the amount of rolling stock required to be put at the disposal of the military authorities for use on foreign lines. They arrange for the distribution of sick and wounded from the Army as noted in Chapter XXIII.

Railway Station Commandants are appointed at initial, transfer, collecting, and terminal stations of lines of railway com-

munication and at any other important railway stations. According as the commandants are under a Line Commandant or under a direction of railways in the theatre of war, they are termed immobile or mobile. An immobile commandant is a captain and has attached to him a lieutenant as adjutant, a clerk, and 2 soldier servants; a mobile commandant is a field officer or captain and has at his disposal a lieutenant as adjutant, 2 clerks, and 2 soldier servants with 3 riding horses. Railway station commandants represent military interests at the railway stations, and are the channels of communication between the officers commanding troop trains and the station masters, but they have no power to interfere with the technical working of the station, although matters injurious to military interests may be reported. They have to superintend the arrangements for feeding troops and feeding and watering horses and cattle, the latrines, &c. If a train halts for the night at a station, the railway station commandant provides for the accommodation of the men conveyed by it. He has the disciplinary power of an independent battalion commander over all the *personnel* under him, and, as regards troops passing through, he reports irregularities to the officer commanding, or, if there is none such, arrests the delinquent and sends him on his journey as a prisoner.

(b.) *Traffic Arrangements.*

Railway traffic in time of war is divided, after the first concentration of the Army and despatch of stores to the frontier, into two distinct branches by the transfer stations (*Uebergungs-Stationen*) which would probably be chosen near the frontier on either side of it. On the enemy's side of the transfer station, the traffic remains entirely in the hands of the military railway authorities, while on the home side the ordinary service of trains is re-introduced as soon as possible, military trains being added as required. Bodies of men up to 300 in number, and up to 60 horses or cattle, may be sent by the ordinary trains. The military trains are classed as extra trains, voluntary trains, and local trains. Extra trains are those demanded by the military authorities on emergencies, and take precedence of all others, while military voluntary trains are those allowed for in the time tables by the railway authorities, which may be used or not by the military according to requirements. In making out the time tables, the railway authorities must pay attention to military regulations as to speed, &c., and to junctions with similar trains from other lines. If such trains cannot be introduced without curtailing the ordinary service, it is the latter that gives way. If the military do not require those trains, they may be used by the public. At any time in time of war, the ordinary traffic may be entirely suspended, but in such cases a postal wagon may be attached to each military train. Local trains are used for local military purposes.

Throughout the duration of the war, the home lines are worked by the ordinary *personnel*, and that on hardly worked lines, as well as the rolling stock, may be supplemented by drafts from other lines which are not so hard pressed by order of the Line Commandant.

On each of the lines leading to the theatre of war, and on the home side of the transfer station, the Inspector-General of Lines of Communication and Railways appoints a station as collecting station (*Sammel-Station*), whither all the trains from the various Army Corps districts are sent before passing on to the lines in the theatre of war. For such stations should be chosen important railway junctions or large stations with extensive buildings and good communications by road and water. At them are formed collecting magazines for provisions (*Sammel-Magazinen*), store depôts (*Güter-Depôts*), and clothing depôts (*Bekleidungs Depôts*). The magazines have each a *personnel* of 13 officials and 6 employes, and are under the Military Economy Department of the War Ministry, but the Intendant of the Army to which the magazines belong gives orders for the disposal of the stores they contain. From them, provision trains (*Verpflegungs-Züge*) are sent forward to the Army, which pass straight through the transfer station and are only unloaded at their destination. The store depôts receive all stores from the Army Corps districts, the gifts from private societies, and hospital stores to be sent up to the front, and also all stores sent down from the front. They are divided into two sections, the first for medical stores, administered by 3 officials and 4 hospital assistants, and the second for packages of clothing and equipment for regiments, &c., under an official of the Clothing and Equipment Depôts (*Montirungs-Depôts*), with 10 non-commissioned officers at his disposal. Clothing Depôts (*Bekleidungs Depôts*), one for each Army, are only formed at certain collecting stations to provide against sudden emergencies, and are pushed forward as the Army to which they belong advances. The *personnel* of each Clothing Depôt consists of 2 retired officers, 3 aspirant paymasters, 5 non-commissioned officers, 5 privates, and 2 officers' servants. The stations chosen as collecting stations must be roomy, and should be situated away from the main lines of communication. They must have separate goods stations and train yards with numerous sidings and loading platforms, roomy sheds, good approaches, open spaces for cattle-yards, good water supply, good lighting arrangements, and buildings in the vicinity which can be used as magazines. Separate platforms and storehouses must be arranged for the unloading of trains coming from and going to the front. Trains with troops and ammunition usually pass through the collecting stations, but provision and store trains are usually unloaded, and fresh trains for the front made up as required. Trains from the Army should not be stopped for any length of time in these stations, but sent on to the initial stations.

The terminal station (*Etappen-Haupt-Ort*) of a line of rail

may be one or several stations, the latter if a large and roomy station is not available. There should be good communications by road from it to the Army, plentiful platform and storing accommodation, room to lay down new sidings, good water supply, engine repairing shops, turntables, and buildings for the housing of the *personnel*. Trains on arriving at these stations must be at once unloaded and sent back. To provide against the magazine accommodation being insufficient, each provision train carries with it a certain number of tents (33 per Army Corps) called unloading tents (*Entladezelten*), which can be used as temporary stores. At the terminal stations are also organised places for the accommodation of sick and wounded and the reception of prisoners, for the sheltering of the horses of the commissariat and ammunition columns which come to replenish, and for the storage of ammunition.

For military traffic the block system is always employed, and the speed for troop trains is laid down as 15 miles an hour inclusive of short halts. The number of trains per diem to be despatched on each line varies greatly with the construction of the line (double or single, level or with steep gradients, &c.), but in making out the time table, a free period is left once in every 24 hours, during which no military trains traverse any given portion of the line, and which may be utilised for coal or ordinary passenger trains, or for military trains which have been delayed. The greatest importance is attached to the regular service being kept up, and in the event of a train being delayed it may be shunted, so as not to interfere with following trains, and sent on afterwards in the free period.

Along the lines used for the transport of troops are organised "feeding and watering stations" (*Verpflegungs-Stationen*), and "watering stations" (*Tränkstationen*). The former are 8 to 12 hours apart (2, if possible 3, in 24 hours), and the trains halt 1 to 2 hours at them. They should have sidings for an entire military train, and a space near them of from 90 to 180 yards long and 90 yards broad for sheds, cook-houses, wells, latrines, &c., for a battalion at least. According to the hour at which the halt is made, breakfast or dinner is served, a hot meal being given once in 24 hours between 6 a.m. and 6 p.m. Bread and forage for the whole journey are taken from the starting point. The watering stations are about half way between the others, and trains stop half an hour at them. Sufficient water for men and horses is the first matter to be looked to in their selection. If, at those stations, the water supply from the station resources is insufficient, the military have to make arrangements for water being brought to the station, but the railway authorities have to supply drinking cups and horse buckets. The latter have also to see to the cleaning or disinfecting of waiting rooms used as eating sheds, latrines, &c. The Intendance arranges for the feeding of the men and horses, but canteens may also be opened at those stations. Arrangements for washing, &c., should also be made.

In calculating the length of journey for troop trains, it is allowed that for ascents of over $\frac{1}{16}$ the train must be divided, for which 15 minutes is allowed, including re-coupling, and a similar period is calculated for if trains have to be reversed. Engine watering stations should be formed at every 10 to 15 miles, and coaling stations at every 15 hours' run. An engine run is calculated at 50 to 75 miles.

Before unloaded wagons are returned they are inspected and, in the case of horse or cattle wagons, disinfected. If the latter process cannot be properly carried out at the terminal stations, it may be postponed till the arrival of the empty train at the collecting station. Rolling stock is usually returned by the way by which it came, although in exceptional cases this rule may be departed from, and once the empty carriages have arrived in their own district they are, except in urgent cases, at the disposal of the railway authorities of that district.

(c.) *Rolling Stock, &c.*

For the accommodation of officers and others classed as officers, 1st or 2nd class carriages are provided, for those below that rank, 3rd or 4th class, but, if there is a want of the latter, covered goods wagons may be utilised, special fittings having been previously placed in them. To each seat in a carriage divided into compartments, or to each pair of seats on one side of a carriage opening from the end, are allotted 3 officers, or 3 sick men travelling sitting, or 4 men in marching order, or 5 men without field equipment. For sick requiring to travel lying down, special arrangements are made, each carriage conveying from 6 to 10. All carriages must be lighted by night.

For horses, covered goods or cattle wagons are used. The horses are usually placed 6 in a wagon, parallel to the rails, three in each end, and heads inwards. Two men are left in each wagon, and as a rule the saddlery accompanies the horses. The height of the doors should be at least 5 ft. 10½ in. for unsaddled horses. A breast piece is fixed across the wagon on each side of the doors. If the wagon is long enough to hold more than 3 horses placed at right angles to the rails, the latter system should be employed, but it is not recommended on account of the difficulty of getting at the horses for watering and feeding. Cattle are usually conveyed in cattle-trucks, seven in each, at right angles to the rails.

Open trucks are used for guns and carriages, the number of such to be put on them varying with the length and carrying power of the truck, as many as 3 ammunition wagons being carried on a truck 30 ft. 6 in. long.

The maximum length for a military train is 110 axles, but if possible they should not have more than 100 axles. If loaded with stores over 176 tons, they should not exceed 66 to 80 axles, and no train should carry more than 313½ tons. Break wagons

must always be supplied. The carriages of a troop train are arranged in the following order :—

- (1.) The locomotive and tender.
- (2.) The guard's van with light baggage.
- (3.) The carriages for men, with those for officers in the centre.
- (4.) Wagons for saddlery, if necessary.
- (5.) Wagons for horses.
- (6.) Trucks with guns, carriages, &c.

For the resulting number of trains for the various units of troops, see Chapter XI, Part II.

Every troop train of the field Army carries with it 10 long and 10 short baulks, 24 chasses, and 20 crampions, to permit of the erection of temporary unloading stages, or to increase defective platform accommodation.

(d.) *Transport of Large Bodies of Troops.*

For the transport of large bodies of troops and their concentration on the frontier, the Chief of Field Railways, on receipt of orders from the Chief of the Great General Staff, issues a general plan of transport (*Generelle Transport-Disposition*)* based on the order of battle of the troops, the distribution of the garrison troops, the orders of the Chief of the Great General Staff as to the zones of concentration of the Armies, the detraining stations, the lines of march, and the points fixed for magazines and transfer stations, the terminal stations resulting from those orders, the distribution of the railway net into lines and the timetables on these lines, the arrangements for the trains carrying reservists and augmentation horses to their corps, and finally the dates of mobilisation.

On this plan there is drawn up for each "line" a timetable (*Fahrtdisposition*), which is based on the number and grouping of the troops to be transported, their garrisons or entraining stations,† the detraining stations, and the amount of rolling stock required and that available. These timetables are drawn up in peace by the Line Commissioners, and are approved of by the Railway Section of the Great General Staff. They show, for each 24 hours following the first day of mobilisation, the general number of the train in the series for the whole operation, the number of the train in the working timetables, the unit to be conveyed, its strength, the number of axles required, the place and hour of starting, the places and hours of halts for refreshment, and the place and hour of arrival.

For each Army Corps or independent Division a table of

* This of course is previously prepared in the Railway Section of the Great General Staff.

† On the 1st July, 1887, there were only 5 battalions and 4 squadrons of the German Army quartered at a greater distance than 5 English miles from a railway station.

movements and marches (*Fahr- und Marsch-Tableau*) is drawn up, which shows the place of mobilisation of each unit, the day on which it is mobilised and ready to move (*marschbereit*), the number of marches (if any) to the entraining station, the date of entraining, the days each unit will be on the move, and the day and place of detraining. The table is partly graphic, a column being allotted to each day after the first day of mobilisation, and a line being drawn across these columns opposite each unit to show the number of days the unit will be on the move, marching days being shown by an "M" in the columns for those days, and different colours being used for the lines in the event of different railway "lines" being traversed. This table is drawn up by the General Staff of the Corps upon the general plan of transport and timetables given to it in peace.

Everything is thus prepared beforehand in peace for the transport of the Army to the frontier, and all that is required is the notification of the first day of mobilisation, upon which the exact dates can be filled in instead of the mere number from the first day of mobilisation previously employed.

CHAPTER XXIII.

THE MEDICAL AND SUPPLY SERVICES IN THE FIELD.

A. THE MEDICAL SERVICE.

THE organisation of the Medical Department in the field is regulated by the "*Kriegs-Sanitäts-Ordnung*" of the 10th January, 1878, which embodies all the experience gained in the war of 1870-71.

As in the British Army, the medical service with the Army of operations is divided into the medical *personnel* attached to the various units, the bearer companies, and the field hospitals. On the lines of communication are the immobile war and lines of communication hospitals, the committees for the transport of sick and wounded, the sanitary trains, the ordinary trains for sick and wounded, the hospital stores dépôts, and the hospital stores reserve dépôt. In the home territory are the reserve hospitals, the fortress hospitals, and the medical *personnel* of garrisons. The military medical service is aided and supplemented by the auxiliary (volunteer) medical service.

(a.) *Medical Service with the Army of Operations.*

The chief of this service is the Surgeon-General of the

Armies of Operation, who belongs to Imperial Headquarters, and who is responsible for the whole working of the Medical Department in the field and its harmonious relations with other branches.

With each Army there is a Surgeon-General attached to Headquarters, who is Director of the Medical Department with the Army, and who has the same relations with the Inspector of Lines of Communication of the Army as has an Army Corps Commander. He has the powers of a Brigade Commander over all the medical *personnel* attached to the Army. He inspects all medical formations and establishments belonging to the Army, superintends the whole medical service, forwards returns to the Surgeon-General of the Armies as to the establishment of hospitals, changes in *personnel*, evacuation of the sick, &c., controls the movements of the field hospitals through the Surgeons-General of Army Corps, and is adviser on all medical and sanitary matters to the Commander of the Army. Frequently a civil surgeon of distinction is attached as adviser to the Surgeon-General, but his functions are purely consultative, and he has no power over the *personnel*.

In each Army Corps there is a Surgeon-General at the head of the medical service, who is under the Commander of the Corps in all matters except such as refer to technical administration, for which he takes his orders from the Surgeon-General of the Army. This medical officer is already appointed in time of peace, has supreme charge of all arrangements for the mobilisation of the medical services belonging to the Army Corps, and arranges for the purchase and storage of all medical material and hospital stores. In war he must keep himself thoroughly acquainted with the distribution of all the medical formations of his Army Corps, and by frequent inspections ascertain that the whole medical service is regularly carried out, and that the sick and wounded are properly treated. He submits proposals to the Corps Commander for the employment and distribution of the field hospitals in the event of a battle, gives orders to them and to the 3rd Bearer Company, inspects the medical service during the action, and arranges for the evacuation of the wounded thereafter. He gives orders for field hospitals to remain behind in the event of the advance or retreat of his corps, and makes arrangements with the Lines of Communication authorities for the field hospitals thus left being rendered available again for their corps as soon as possible, and for the replenishment of all stores expended. His Staff consists of a civil consulting surgeon, a medical officer as secretary, an apothecary (official), and 2 hospital assistants, with 4 officers' servants, 1 train driver, 1 2-horsed baggage wagon, and 6 officers', &c., horses.

Each Division has a divisional surgeon, who for discipline, &c., is under the Divisional Commander, and for technical matters under the Surgeon-General of the Army Corps, or, in an independent division, under the Surgeon-General of the

Army. He also is appointed already in peace, and superintends the mobilisation of the bearer company, and the supply of medical stores, &c., to the units of the Division. In war he attends daily when orders are given out, and takes those for the bearer company or the field hospitals attached to the Division. When an action begins, he chooses the points for the establishment of a dressing station by the bearer company, or for that of the field hospitals, and submits his proposals for the sanction of the Divisional Commander, but in urgent cases he may give his own orders. During the action he keeps his General informed of the positions of the medical formations, and superintends their working. His place will usually be with the dressing station of the bearer company, but it is his duty to inspect also the regimental first-aid stations. He has a hospital assistant and a groom attached to him, and 2 riding horses.

Under the headings of the various arms, the numbers of medical officers, hospital assistants, and stretcher bearers, and the medical material attached to each unit have been noted, and it is needless to recapitulate these data here. When troops are halted, a regimental medical service is organized as in peace and sick wards are formed, which are taken over by the Lines of Communication authorities when the troops move. On the march, men with slight ailments are taken along with troops; those who cannot be so taken are left in charge of the local authorities or are formed into detachments by Divisions or Army Corps, and sent under proper medical supervision to the nearest hospital in rear on requisitioned carriage. In action, each unit forms a first-aid station (*Truppen-Verbandplatz*) with its medical *personnel* and medical store wagon or medical canteen, out of rifle range of the enemy. With this, one-half of the medical officers and hospital assistants remain, and here the regimental stretcher-bearers leave their rifles and knapsacks and put red bands on their left arms. They then, with the other half of the medical officers and hospital assistants, the latter carrying dressing-knapsacks, follow the troops into action and bring back the wounded to the first-aid station. The first-aid stations of several units are often united into one.

The second line of medical assistance is formed by the *bearer companies*, of which one is attached to each Division and a third remains at the disposal of the Surgeon-General of the Corps. The bearer companies form part of the train battalion of the Army Corps, and as such their organisation and material have been described in Chapter XI. The duty of a bearer company in action is to search for and bring in the wounded from the field or the first-aid stations, and to form a dressing station where their wounds are dressed and soup or cordials administered to them. When the action is over and the wounded have all been despatched to the field hospitals, the bearer company packs its material and follows the troops it belongs to. At the dressing station, the medical officers and hospital

assistants are divided into three sections. The *personnel* of the first section receive the wounded, point out where they are to be placed, cut their clothes away from their wounds, clean and inspect the latter, and attach a card with the result of the examination written on it. Slightly wounded men have their wounds dressed by this section and are all collected together in one place. The *personnel* of the second section attend to the more severely wounded and apply the surgical appliances in cases of fractured limbs. The third section carry out more important surgical operations when it is necessary that such should be undertaken before the patient is removed. The paymaster of the bearer company superintends the distribution of cordials or refreshments, and takes charge of valuable articles belonging to the wounded. From the dressing stations the slightly wounded are sent in detachments on foot, and the severely wounded in requisitioned carriages filled with straw to the field hospitals detailed for the purpose. When all the wounded have been brought in off the battle-field, the ambulance wagons of the bearer company may be used to transport the more serious cases.

In third line are the *Field Hospitals (Feld-Lazareth)*, of which 12 are mobilised by each Army Corps, 6 by the 25th (Hessian) Division, and 3 for each Reserve or Landwehr Division. Each can receive 200 wounded or sick, and can be divided into two sections. The establishment of a field hospital is as follows:—

Surgeons-major	2
Assistant surgeons	3
Total medical officers	5
Apothecary	1
Hospital inspector	1
Accountant	1
Assistant apothecary	1
Total officials	4
Sergeant wardmaster	1
Under-officer clerk	1
Under-officer storekeeper	1
Hospital assistants	9
Sick attendants	12
Cook	1
Transport under-officers	2
Transport lance-corporals	2
Transport trumpeter	1
Transport drivers	9
Officers, &c., servants	8
Total N.-O. officers and men	47
Horses :—Officers', &c., riding	9
Troop riding	5
Draught	18
Total horses	32

2-horsed baggage wagon.. ..	1
2-horsed medical store wagons.. ..	2
4-horsed utensil and material wagons.. ..	8
Total carriages	6

The medical store wagons are similar to those described in Chapter XI under the head of bearer companies. In the utensil and material wagons are carried the hospital stores required and a coverlet and a pair of sheets for each patient, but no other bedding, which is obtained locally by requisition, and no tents. All stores have been reduced to the lowest possible number so as to diminish the transport and increase the mobility of the field hospitals.

As soon as a field hospital has been established and the wounded properly attended to, the medical officer in charge of it informs the Corps Commander, the Inspector of the Lines of Communication, and the nearest station commandant, giving the number of wounded and that of those fit or unfit to be removed, as well as the amount of *personnel* and material required to relieve the hospital. The main object of the medical officer in charge should be to get his hospital emptied and to follow his corps as soon as possible. If the Army has to retreat, the horses and all *personnel* and material not absolutely required retire with it, while the wounded are left behind under the protection of the Geneva Convention.

As patients are discharged cured from hospital they are formed into small detachments and handed over to the Lines of Communication authorities, who send them up to their regiments. As regards the sick or wounded who can be moved, the medical officer in charge of the field hospital puts himself in communication with the nearest committee for the transport of sick and wounded, and informs it of the number who require sitting or lying down accommodation and of those with contagious diseases who require to be moved with special precautions. Notice is sent to the field hospital when its patients can be evacuated and the medical officer in charge has to arrange for their transport, on requisitioned wagons furnished by the nearest station commandant, to the entraining station. The patients who cannot be moved are usually collected into an immobile war hospital formed on the spot, and the field hospitals then rejoin their Army Corps. Before starting, each replenishes its material from the hospital store depôts.

(b.) *Medical Service on the Lines of Communication.*

On the Staff of each Inspector of Lines of Communication is a Surgeon-General, whose duties are to superintend the medical service within the sphere of action of the Inspector. He corresponds with the Surgeon-General of the Army direct, and generally also direct with the Surgeons-General of Army Corps. He is in charge of all medical formations within his sphere of action, but certain restrictions are imposed on him

with regard to units, such as field hospitals left behind by the Army of Operations, which have to be sent after their corps as soon as possible. Otherwise his obligations are much the same as those of the Surgeon-General of an Army Corps. He gives orders for the formation, occupation, relief, evacuation, and breaking up of all hospitals, superintends the performance of their duties by the hospital inspectors, arranges for the evacuation of the sick and wounded, distributes the hospital *personnel*, including that of auxiliary societies (the latter in concert with their delegate), superintends and inspects the hospitals and the sanitary service, arranges for the replenishment of all stores, and controls the medical administration and expenditure. He has 3 riding horses, 2 grooms, 1 train driver, and a 2-horsed baggage wagon which carries also a medical canteen.

On mobilisation, each Army Corps places at the disposal of the Surgeon-General of the Lines of Communication of the Army to which it is attached a *Hospital Inspector* (a medical officer of superior rank). His duties are to make constant inspections of all hospitals in the district assigned to him, to make arrangements on the spot to remove any difficulties experienced in their working, to organize War and Lines of Communication Hospitals, to hasten the relief of the field hospitals and the evacuation or distribution of the sick and wounded, &c. In their districts the Hospital Inspectors are the direct chiefs of all the medical *personnel*, and have the disciplinary powers of the commander of an independent battalion. Each has two riding horses, a hospital assistant, and a groom.

In each station of the lines of communication, preparations are made for the treatment of sick and wounded, but, as far as possible, even in an enemy's country, the services of local medical practitioners should be made available for this purpose. When a number of ailing or footsore men have been left behind, a *dépôt* of such may be formed and attached to a Lines of Communication Hospital.

The *Lines of Communication Hospitals (Etappen-Lazareth)* are intended to receive the sick of troops passing through, those of the lines of communication troops, and those from trains of wounded or sick who cannot bear further transport. The buildings to be occupied are detailed by the Station Commandant, and, if necessary, tents or hut barracks may be used. When local medical attendance is not available, medical officers may be detailed for these hospitals by the Surgeon-General. The subordinate *personnel* is generally supplied by the auxiliary societies. Where committees for the transport of sick and wounded or their sub-committees are stationed, such hospitals must of course be organised, as also at all important railway stations and junctions.

War Hospitals (Kriegs-Lazareth) are those formed to take over the wounded which cannot be moved when the field hospitals start to follow their corps. For their *personnel*, each Army Corps mobilises 19 Medical Officers, 3 apothecaries, 6

other officials, 27 hospital assistants, 3 under-officers, 36 sick attendants, 24 train soldiers, and 3 cooks. The material for them is drawn from the hospital store depôts.

For each Inspection of Lines of Communication there is formed a *Hospital Store Depôt* (*Lazareth-Reserve-Depôt*) containing medicines, surgical instruments, bedding, linen, clothing, utensils, &c., in quantity about equal to the complete requirements of an Army Corps, except as regards those common articles which can easily be purchased as required. This depôt is usually kept at the terminal station of the line of communication, and is carried forward in the case of an advance of the latter on its own or on requisitioned carriage. From it, the medical stores of the troops, of all mobile medical formations, and of the War and Lines of Communication Hospitals are replenished or supplied respectively, and such issues are at once replaced from the hospital stores reserve depôts. The *personnel* of each is composed of 2 lieutenants, 2 hospital inspectors, 4 apothecaries, 6 makers of surgical instruments, 12 under-officers, and 6 orderlies, servants, &c. To each is attached a transport column, consisting of 2 under-officers, and 20 train drivers, with 20 two-horsed wagons.

The *Hospital Stores Reserve Depôts* are formed under the orders of the Ministry of War in the home territory at the collecting stations (see Chapter XXII), and form the first section of the general store depôts of material at those stations. Their *personnel* consists of 1 hospital inspector, 1 accountant, 1 apothecary, and 4 hospital assistants and store keepers. From them the hospital store depôts are supplied.

The evacuation of the sick and wounded is supervised by the Surgeon-General of the Armies in communication with the chief of the railway service, and he alone has the power of disposal of the sanitary trains. Under his orders the Surgeons-General of Armies and Lines of Communication of Armies superintend the service in their respective spheres. The executive bodies are the committees for the transport of sick and wounded, and the medical officers attached to home line commandants, and the patients are transported in special sanitary or ordinary trains.

Committees for the Transport of Sick and Wounded are formed in each Inspection of Lines of Communication, and comprise each 1 medical officer as president, and 2 surgeons and 4 assistant surgeons as members, with a small subordinate *personnel*. Each can be divided into three sections, each with 2 medical officers, 2 hospital assistants, 3 sick attendants, and 2 officers' servants. A number of medical men and medical subordinate *personnel* from the auxiliary societies are placed at the disposal of each committee to furnish the necessary attendants in trains with sick and wounded. When the troops are concentrated before the opening of hostilities, these committees join the staffs of the Inspectors of Lines of Communication, and as those lines lengthen out the committee is brought forward

or sends its sections successively forward to permanently or temporarily important stations. The most advantageous position for the committee will generally be the terminal station of the lines of communication. Wherever the committee or a section of it is stationed, a Lines of Communication Hospital must be opened, and at every change of station the railway authorities, the Surgeons-General of Army Corps, and the hospital inspectors should be informed.

The duties of the committees are simply to arrange for the evacuation of the sick and wounded and to ascertain that all necessary arrangements have been made in the trains destined to take them to the rear.

When the trains pass out of the sphere of action of the lines of communication authorities, their farther progress and the distribution of the sick and wounded are superintended by the *medical officers attached to the line commandants*, at the disposal of each of whom a certain number of reserve hospitals is placed. To permit of an even and regular distribution of patients, every such reserve hospital sends every five days to the line commandant a return showing the numbers of beds occupied and empty in it. The line commandant keeps up constant communication with the committee for the transport of sick, &c., corresponding to his line, and sends to it every five days a return showing the number of beds available; on the departure of a train of sick or wounded, the line commandant is informed by telegraph by the committee of the day and hour of its arrival within his sphere of action, and he in his turn informs the commandant of the station or stations and the reserve hospital or hospitals concerned of the hour of arrival of the train.

The special trains in which sick and wounded are evacuated are of two kinds, Sanitary Trains (*Sanitäts-Züge*), and Sick Trains (*Kranken-Züge*),

Sanitary trains are again divided into hospital trains (*Lazareth-Züge*), and auxiliary hospital trains (*Hülf's-Lazareth-Züge*). The first of these take only those patients who must travel lying down, and are permanent organisations with fixed *personnel* and material, organised at the expense of the Military Department. The auxiliary hospital trains are temporary formations with specially fitted up rolling stock which are only organised at times of great pressure, but which receive the same *personnel* as a hospital train.

On the outbreak of war, the *hospital trains* laid down in the plan of mobilisation are at once formed. Each train consists of 41 carriages, of which 30 are wagons for 10 sick each, and they are arranged as follows from the front:—

- 1 Baggage van, with break.
 - 1 Store van, with break.
 - 1 Carriage for the medical officers.
 - 1 Carriage for hospital assistants, with break.
 - 8 Carriages for sick.
 - 1 Store wagon for provisions, with break.
 - 1 Wagon fitted as a kitchen.
 - 7 Carriages for sick.
 - 1 Wagon for office and apothecary's store, with break.
 - 7 Carriages for sick.
 - 1 Wagon fitted as a kitchen.
 - 1 Store wagon for provisions, with break.
 - 8 Carriages for sick.
 - 1 Carriage for hospital assistants, with break.
 - 1 Wagon as fuel store, with break.
-
- 41 Carriages.

The carriages must all be end-opening, so that there may be through communication from end to end of the train, and all are marked externally with the Red Cross and the number of the train. The *personnel* of each consists of 1 surgeon, 3 assistant-surgeons, 16 hospital assistants, 16 hospital attendants, and 1 accountant.

Auxiliary Hospital Trains are formed by order of the Inspector-General of Lines of Communication out of ordinary rolling stock specially fitted up, and are arranged and organised as nearly like hospital trains as possible. They may eventually, by order of the Surgeon-General of the Armies, be converted into permanent formations.

All the sanitary trains are at the disposal of the Surgeon-General of the Armies, who assigns them to the various lines of communication as required on the requisition of the committees for the transport of sick and wounded, and the latter then make the arrangements for their utilisation. The forwarding of the trains is regulated by the military railway authorities and line commandants, and the medical officer in charge of the train is bound to conform to all orders given by them during the journey, but sanitary trains cannot be utilised for purposes other than those they are intended for and must be forwarded to their destination with as little delay as possible.

The *Sick Trains* are for the transport of such sick and wounded as can travel sitting, and are formed as required. As a general rule no medical *personnel* is attached to them. They may be composed of covered rolling stock of any description, wagons without seats being provided with sacks stuffed with straw and straw shaken down on the floor. Each wagon is provided with a lantern. As a general rule, sick trains only travel by day and halt by night at points detailed by the lines of communication authorities. In the daily service of trains to the rear established on the line of communications, it is usual to assign one train as a sick train once for all. Two gendarmes and a guard of one man per carriage under an under-officer accompany each train.

(c.) Medical Service in War in the Home Territory.

In each Army Corps district a territorial principal medical officer is appointed, whose functions are the same as those of a Surgeon-General of an Army Corps in peace. He has to inspect frequently the military hospitals and the civil hospitals for the accommodation of sick or wounded established by private individuals or a society for aid to the wounded. He has to ascertain that all the administrative and sanitary regulations are properly carried out, and that no patient remains in hospital after he has been cured. He superintends also the instruction of the men of the Ersatz Reserve called up for service as hospital assistants to replace losses in the medical *personnel* of the mobile Army.

As long as fortresses of the interior are not armed, the hospital service is carried on as in peace, but the principal medical officer of the place has to inspect the store depôts and ascertain that all is in readiness for the efficient organisation of the fortress hospitals in case of siege. One of his chief cares is to send away as soon as possible all sick who are not likely to get well soon to the nearest hospitals in open towns, so as to keep the fortress hospitals as unencumbered as possible. No sick from the front are ever sent to a fortress hospital until all danger of the place being invested has passed away.

The medical service in immobile troops is carried on as in peace, civil practitioners being called in if no military medical officers are available. The recruiting service is carried on by military medical officers specially detailed.

The ordinary peace hospitals being insufficient to receive the mass of sick and wounded from the front, special *Reserve Hospitals* are formed by the military territorial authorities, and this name is also assumed by all existing military hospitals not in fortified places. The *personnel* provided for such is:—

1 or 2 Medical officers	} for every 100 sick.
1 Assistant medical officer	
3 Hospital assistants	
6 Hospital attendants	
1 Hospital inspector	
1 Apothecary for every 400 sick.	

This *personnel* is drawn as far as possible from the reserve or Landwehr, but as few medical officers are available for those duties civil practitioners have generally to be called in. The hospital assistants and attendants are taken from untrained men of the Ersatz Reserve, and thus men specially trained in those duties are set free for employment with the active Army. These hospitals are supplied and administered as are military hospitals in time of peace. All men discharged cured are sent to the nearest lines of communication station, where they are re-clothed, re-armed, and, when their health is quite re-established, formed into detachments and sent to join their corps or its depôt. Men discharged unfit for service are sent to the depôt of their corps.

(d.) Societies for Aid to the Wounded.

The aid of these societies is only accepted if they place their *personnel* and material under the orders of the military authorities, organise their hospitals, &c., according to military regulations, and confine their activity to the lines of communication and the home territory. The whole auxiliary service is centred in the hands of an Imperial Commissioner who accompanies Imperial Headquarters, and a central office is established at Berlin, whence all the societies of the states and provinces of the Empire are directed. Under the Imperial Commissioner is a delegate with each Inspection of Lines of Communication, and a similar official in each Army Corps district directs all the auxiliary hospitals, &c., in that district and is stationed at the initial point of the line of communications.

The duties of the auxiliary societies are to furnish the *personnel* for the trains evacuating the sick, to supply reserve *personnel* for the various hospitals, to gather and forward patriotic and other gifts (*Liebesgaben*) to the Army, to assist the reserve hospitals by taking over certain branches of their administration, by organising special hospitals, or by arranging for wounded and sick to be cared for by private persons, and finally to give news to the families of the sick or wounded.

These societies may also organise special sanitary trains, and the commander of an Army may authorise volunteers from them to join a bearer company, provided that they engage to obey all order given by its commander.

Every member of such a society employed in the theatre of war is subject to military law and has to wear a special uniform (grey tunic and trousers and white cap with the red cross). He must be a German subject and may not belong to the Army or Ersatz Reserve. If a Landsturm man, he must be over 40 years of age. Foreign assistance is only accepted within German territory.

It may be noted here that these societies are widely spread and well organised in peace in Germany, that they dispose of large funds, and that they keep ready in peace a great proportion of the material—especially sanitary trains—they will require in war.

B. COMMISSARIAT SUPPLIES IN THE FIELD.

At the head of the whole supply service of the Armies in the field is the Intendant-General, who remains with Imperial Headquarters and whose Staff is detailed in Chapter XXI. He directs, under the instructions of the Inspector-General of Lines of Communication and Railways, the administration of all troops, &c., in the theatre of war, and controls the working of the Intendants of Armies, Army Corps, Lines of Communication, and General Governments, but he ought not to limit the initiative allowed to each nor interfere in their relations with their commanding officers, except in so far as is necessary to introduce

unity into the supply arrangements by rail. He fixes the composition and loads of the supply trains sent from the collecting stations, and distributes those trains to armies, acting in concert with the railway authorities. Every ten days he receives reports from the Intendants of Armies showing how their corps are supplied (requisition, contract, &c.), in what magazines and for how many days their requirements of bread, meat, and forage are ensured, and how many days' supplies the troops have in possession. He arranges for a certain number of supply trains being constantly kept loaded at convenient points, and gives orders for their being sent up to the front and replaced by others.

In each Army there is an Intendant of the Army whose duty is to ensure supplies being delivered in proper time to the troops. He has to arrange for the resources of the country being utilised, and for magazines being formed and filled by local requisitions or by supplies sent up. He fixes the amount and takes measures to ensure the collection of contributions of money, and divides the various resources of the country among the Army Corps. He is under the direct orders of the Chief of the Staff of the Army, but is under those of the Intendant-General in all matters relating to administration and accounts, and corresponds direct with him and the Intendants of Army Corps of neighbouring armies and of lines of communication.

At the head of the supply service in each Army Corps is a Corps Intendant who directs the administration of the corps, and whose principal duty is to ensure the issue of supplies to the troops. He is under the orders of the Corps Commander, and issues his orders on his own responsibility, according to those given by that officer. He maintains close relations with the Chief of the Staff, and consults him upon orders to be submitted to the Corps Commander for signature. Under him are the Corps Intendance, three Divisional Intendances (one for each Division and one for the Corps Artillery, &c.),* the Field Treasury, the Corps Supply Office (*Feld-Haupt-Proviant-Amt*), two supply offices (*Feld-Proviant-Amt*) for the divisions, and one for the corps troops, and the Field Bakery Office (*Feldbäckerei-Amt*). The Field Hospitals and the Postal Service are also under the Corps Intendant for administration.

The Intendants of Divisions have the same duties as regards their Divisions as the Corps Intendant has as regards the Corps. The Field Treasury makes all disbursements of money authorised by regulations or by orders, and is under the orders of the Central Treasury Office at Berlin, to which it sends monthly returns of the state of the treasure-chest. Accounts are never settled direct between two field treasuries, all sums paid on account of another field treasury being settled by the Berlin Office. The *personnel* of the supply offices is at the disposal of the Divisional Intendants, who distribute it among the maga-

* Each corps mobilises a fourth for the cavalry divisions or reserve formations.

zines formed. The bakery office directs the baking of bread, the establishment of field bakeries, and the collection, slaughter, and distribution of cattle. The Field Bakery Column is placed under the orders of this office.

The establishments of these various departments, &c., are as follows:—

Ranks, &c.					Corps Inten- dence.	Divisional In- tendence.	Field Treasury.	Corps Supply Office.	Divisional Supply Office.	Corps Troops Supply Office.	Field Bakery Office.
Corps Intendant .. .. .	..	..	..	..	1	..	..	..	..	..	..
Intendence Councillor .. .. .	..	..	..	..	1	1	..	..	..	..	..
Paymaster .. .. .	..	..	..	..	..	..	1	..	..	..	..
Secretaries .. .. .	..	..	..	..	3	2	..	..	..	..	..
Registrars .. .. .	..	..	..	..	3	2	1	..	..	..	..
Assistant Registrars .. .. .	..	..	..	..	3	1	1	..	..	..	..
Cashier .. .. .	..	..	..	..	..	..	1	..	..	..	..
Principal Accountants .. .. .	..	..	..	..	..	..	..	1	1	1	1
Magazine Controllers .. .. .	..	..	..	..	..	..	..	3	1	1	1
Assistant Controllers .. .. .	..	..	..	..	..	..	..	2	6	4	2
Master Bakers* .. .. .	..	..	..	..	..	..	..	..	..	..	3
Storekeepers* .. .. .	..	..	..	..	..	..	..	..	2	2	..
Office attendant* .. .. .	..	..	..	..	..	..	1	..	..	..	..
Total Officials					10	6	5	6	10	8	7
Under-officer of train .. .. .					..	..	1	..	..	..	..
Train drivers .. .. .	..	..	..	..	4	2	4	1	1	1	1
Officials' servants .. .. .	..	..	..	..	10	6	8	6	8	6	6
Total N.C. officers and men					14	8	13	7	9	7	7
Horses :—Officials' riding .. .. .	..	..	..	..	17	11	5	10	10	8	9
Troop riding .. .. .	..	..	..	..	..	..	1	..	..	..	..
Draught .. .. .	..	..	..	..	8	4	12	2	2	2	2
Spare .. .. .	..	..	..	..	..	..	2	..	..	..	..
Total horses					25	15	20	12	12	10	11
2-horsed baggage wagons .. .. .	..	..	..	..	2	1	..	..	..	..	..
2-horsed office wagons .. .. .	..	..	..	..	..	1	..	1	1	1	1
4-horsed treasury wagons .. .. .	..	..	..	..	..	..	3	..	..	..	..
4-horsed office wagons .. .. .	..	..	..	..	1	..	..	..	..	..	..
Total carriages					3	2	3	1	1	1	1

To each Inspection of Lines of Communication is attached an Intendence Office, at the head of which is an Intendant whose duties are the same, within his own sphere, as those of a Corps Intendant. He has to ensure the supply of the troops, &c., on the lines of communication, and to superintend the formation of magazines and the forwarding of supplies to the troops

* Rank as N.C. officers.

at the front. He has at his disposal a Lines of Communication Bakery Column and as many Wagon Park Columns and Reserve Bakery Detachments as there are Army Corps to be supplied. _

At the outbreak of a war, the Commissariat supplies are furnished according to a plan previously arranged by the Great General Staff. The period of mobilisation is divided into two terms with respect to the supply in kind, viz., the period of preparation for war and the period of actual readiness. During the former, the peace regulations continue in force and the supplies are furnished from the peace magazines. As soon as the period of actual readiness commences, and the troops are "mobile," the supplies are received from—

- (a.) The Field Commissariat allotted to Army Corps.
- (b.) Lines of Communication or other stationary magazines within the *rayon* of the corps, or by contract.
- (c.) By requisition; or, finally,
- (d.) From the persons on whom troops are billeted.

(a.) *Supplies from the Field Commissariat.*

In order that the troops may be independent to a certain extent of the supply wagons, which in time of war are liable to detention on the march, they take with them on leaving their peace garrisons an "Iron Ration" (termed *Eiserne Portion* for rations, *Ration* for corn), which must not be drawn upon except in cases of most urgent necessity or when it can be replaced by a fresh supply. Dismounted troops, field artillery, and train carry such a food-ration for three, and cavalry for one day, the dismounted troops carrying it on their persons, the cavalry on the saddle, and the artillery and train on their carriages. A 3 days' iron ration consists of $17\frac{1}{2}$ oz. biscuit, 7 oz. preserved meat, &c. (or 6 oz. bacon), $4\frac{1}{2}$ oz. rice (or $8\frac{1}{2}$ oz. of meal, &c.), $\frac{3}{4}$ oz. of coffee, and $\frac{3}{4}$ oz. of salt; total about 2 lbs. 4 oz. with packing. For every riding horse one, and for every draught horse three days' corn is carried as follows:—In the cavalry, for officers' and draught horses, on the carriages, for troop horses on the saddle; in the field artillery, for troop riding and near draught horses one ration on the saddle, the others on the carriages, for officers' and off draught horses all the rations on the carriages; in other troops, for all horses, on the carriages.

In the provision wagons attached to the troops, which carry about 10 cwt. each, are carried one day's full rations and three days' tea-rations for all ranks, besides forage for officers' horses in the dismounted troops, and the butchery instruments. About half of each wagon is given up to canteen stores, the issue and replacement of which is arranged for by companies, &c. In the forage wagons attached to cavalry and horse artillery (contents 20 cwt.) are carried one day's full forage for all horses. Cattle for the meat ration are slaughtered the evening before

issue, and the meat is then packed on the provision wagons. If possible a second day's supply of meat in the shape of slaughter cattle should always be driven along with the baggage. The numbers of these in good cattle countries will be: for a battalion, 2 oxen, or 5 pigs, or 18 calves or sheep; for a cavalry regiment $1\frac{1}{2}$ oxen, or 3 pigs, or 12 calves or sheep; for a squadron or a battery $\frac{1}{2}$ ox or $\frac{1}{2}$ pig, or 3 calves or sheep.

Each Army Corps has 5 Provision Columns, 5 Wagon Park Columns, and 1 Field Bakery Column, the composition, packing, and employment of which are fully detailed in Chapter X. Of the Provision Columns, each Division usually receives two and the corps troops one. When the provision wagons of the troops cannot be refilled by requisition or from magazines, the Provision Columns, which together carry about four days' rations for the whole Army Corps as well as having slaughter cattle for that period driven with them, are drawn upon. These in their turn replenish their supplies from the Wagon Park Columns, but if necessary the troops may be supplied direct from the latter. The Wagon Park Columns receive their supplies according to circumstances, partly by convoys of supplies from the Peace Magazines, partly from Advanced and Lines of Communication Magazines, but mostly by direct contracts and requisitions arranged by the Intendance.

Thus the total of supplies carried by the troops or by the Field Commissariat formations is—

1. Iron-rations	3 days' rations, 1 to 3 days' oats.
2. In the Provision and Forage Wagons attached to the troops	1 day's rations.
3. In the five Provision Columns	4 days' rations.
4. In the five Wagon Park columns	9 days' rations or 7 days' oats.

Total 17 days' rations with 1 to 3 days' oats, or
8 days' rations with 8 to 10 days' oats.

(b.) *Supplies from Magazines or by Contract.*

When the troops cannot be rationed on the spot, they are supplied from magazines or, failing these, by contract. As long as the Army is within reach of its own peace magazines it is supplied from them, but when the strategic concentration takes place magazines have to be formed in the occupied *rayon*, as it would be impossible for a large concentrated body of men to live on the country. The troops bring with them their iron rations and the Provision, &c., Columns leave their place of mobilisation fully laden, but these supplies should not be drawn upon during the concentration. Intendance officials are sent ahead to collect supplies by contract or requisition,* and the Field Bakery of each corps is sent on as early as possible so as to provide bread for the troops on arrival. The principal maga-

* In 1870 the troops of the IInd Army were ordered to bring six days' supplies with them to fill those magazines.

zines (*Haupt-Magazinen*), which eventually become Lines of Communication Magazines, are on lines of rail, and from them the branch (Corps or Divisional) magazines (*Neben-Magazinen*) are filled by the Provision or Wagon Park Columns. The troops draw their supplies direct from those magazines, which should be so placed that no unit has to send farther than 10 miles for its supplies. Auxiliary bakeries are established in the various localities occupied. The arrangements for an Army engaged in a siege or halted for any length of time would be similar.

The various magazines on the Lines of Communication are filled either by requisitions in the district, or by purchases made with the money raised by contributions, or by supplies sent from the home territory, or by a combination of all three means. Magazines are of two sorts, Advanced Magazines (*Vorgeschobene Magazinen*) and Lines of Communication Magazines (*Etappen-Magazinen*). The former are formed at the terminal stations of the Lines of Communication, and are expense magazines from which the Wagon Park Columns are filled up when necessary. The Field Bakeries are established along with those magazines. When the terminal stations are advanced, the Advanced Magazines become Lines of Communication Magazines. These latter are formed at the various stations on the line, and are intended to supply troops passing through. They are also centres of collection for supplies to be sent up to fill the Advanced Magazines. The Lines of Communication Wagon Park Columns, strengthened when necessary by hired transport, are employed to carry supplies up the line.

At certain stations on the Lines of Communication, Supply Trains (*Proviant-Züge*) are kept ready loaded and made up so as to be capable of being sent off at short notice to any point where a sudden necessity for supplies has arisen.

(c.) *Supplies by Requisition.*

In an enemy's country, requisitions may be made either by the Intendance or by the troops, but as a rule troops on the march should be fed by the persons they are billeted upon, and requisitions only resorted to when for any reason the former system cannot be employed. Every commander of a body of troops or the senior officer in any place is authorised to order a requisition, but is responsible for the way in which it is carried out. The greatest care must be taken to preserve discipline and prevent plundering or waste, and always, if possible, officers are to be placed in command of the parties carrying out the requisition. Force may be employed if other means fail. All supplies thus collected by advanced cavalry or advanced guards, and not required for their own use, are to be left for the troops following them under a guard.

It is mostly on the Lines of Communication and in the general governments that requisitions are employed, and there they are

made on a large scale, but frequently it is found more advantageous to impose money contributions, and with the money thus gained to purchase supplies. As a matter of experience, this system of requisition preserves the discipline of the troops, does not distress the country so much as requisitioning supplies in kind, provokes less animosity among a hostile population, and facilitates the duties at the magazines and on the lines of communication.

(d.) Supplies from the Persons on whom Troops are Billeted.

This method of supply is the rule on the line of march. The officer or soldier must accept the fare of his host so long as the quantity offered is equal to a full war ration. Unless payment on the spot is ordered, receipts are given for the number of rations received.

CHAPTER XXV.

THE LANDSTURM.

As already stated in Chapter IV, the Landsturm or *Levée en Masse* comprises all men fit to bear arms between 17 and 45 years of age who belong neither to the Army (including Landwehr and Ersatz Reserve) nor Navy (including Seewehr and Naval Ersatz Reserve). It is divided into two Bans, the first, comprising all men as above up to the 31st March of the year in which they complete their 39th year, and composed of entirely untrained men, and the second consisting of men from 39 to 45 years of age, and including all those who have passed through the Army. These two Bans are consequently of very different values. On mobilization, men of the 1st Ban would probably be utilised in non-combatant posts in the garrison army, such as those of regimental tradesmen, hospital attendants, or, under military law, in working parties on military works; while the trained men of the 2nd Ban might with advantage be utilised to complete Landwehr units, but as a rule would be formed in separate Landsturm units.

The Landsturm is called out by Imperial proclamation, but in cases of emergency Army Corps Commanders or the Governors or Commandants of fortresses may exercise this right. On being called out, the Landsturm is placed under the same regulations as the Landwehr, and its men are armed, equipped, and clothed in such a manner that they can be utilised for any military duties. The men are called out by yearly classes, and on the Imperial decree dissolving the Landsturm being issued they are

freed from further subjection to military law. Men settled abroad may receive a dispensation from the obligation to report themselves on the Landsturm being called out.

It is extremely difficult to arrive at any approximation to the numbers of men available in the Landsturm. A writer in the "*Revue Militaire de l'Etranger*" (No. 689, 29th February, 1888), puts the total number of men who will have passed through the Army and will be serving in the 2nd Ban of the Landsturm, at 644,000, besides 79,000 who will have been trained in the Ersatz Reserve, these figures referring to a period some 25 years hence. He calculates that 504,000 untrained men will then be in the 2nd Ban, and that the strength of the 1st Ban will be 3,072,000 men, including 1,000,000 under 20 years of age. These are round figures, and appear to be somewhat exaggerated, but may be accepted as an approximation.

The method of organisation pursued will probably be based on the Landwehr Battalion District organisation, each district furnishing one or more Landsturm battalions, with perhaps a small proportion of the other arms, except cavalry, a few men only being mounted to serve as orderlies, guides, gendarmes, or as transport drivers. The strengths of the various units would probably be the same as those of the corresponding units of the Landwehr.

Landsturm formations receive a uniform which can be distinguished from a distance. The "*Danzig Gazette*" of 5th October, 1884, states that they (as well as the Landwehr, which is improbable) will be clothed in a loose dark blue blouse, with distinguishing shoulder-straps for each arm, light blue being the colour of the latter for infantry. The head-dress will probably be a forage cap with peak, or possibly the shacos, similar to those of the rifles, recently replaced for reserve (Landwehr) field troops by helmets, and still in store. The armament will be that of the reserve (Landwehr) troops.

The German Landsturm, when called out, will be a force to be seriously reckoned with. All the men incorporated in the organised formations will probably have passed through the active Army and Landwehr, and for the next seven years there will be many men in its ranks who are veterans of the war of 1870-71. Men under 45 years of age are far from having passed their prime, and, moreover, when the Landsturm is called on to meet an enemy, it will be for home and fatherland on their own soil. As mentioned in Chapter XII, Part II, the Old Soldiers' Societies will not only offer great assistance in the formation of the Landsturm, but their efforts in peace to maintain the soldierly spirit, devotion to the Sovereign, and sense of duty to the country, without which troops are useless, will bear good fruit in the hour of need, if such arrive.

CHAPTER XXVI.

THE IMPERIAL NAVY.

THE Imperial Navy dates from the year 1867, when a programme for the creation of a Federal fleet was adopted by the North German Confederation, although the various States had prior to that date possessed some small ships of war. At the outbreak of the war of 1870 the North German Navy consisted of 3 ironclad frigates, 2 ironclad ships, 9 corvettes, 3 despatch boats, 22 gunboats, and one ship of the line, used as an artillery instructional ship, manned by 205 officers and 3,650 men. The programme of 1867 had provided for the gradual construction of 16 ironclads, 20 corvettes, 8 despatch boats, 22 gunboats, &c., but after the war of 1870 it was considered that certain modifications would have to be made in this programme in consequence of the changes in naval tactics, notably that the number of ironclads should be increased, and that a large number of torpedo-boats should be provided. Accordingly in 1873 a new project was approved by the Reichsrath, in which the necessary strength of the Imperial Fleet was laid down as 23 ironclad ships (8 frigates, 6 corvettes, 7 monitors, 2 floating batteries), 20 unarmoured corvettes, 6 despatch boats, 18 gunboats, 3 instructional ships, 2 artillery school ships, and 10 1st class and 18 2nd class torpedo-boats. Many modifications have been made in this plan in the course of years. The 8 frigates were all built, but one of them, the "Grosser Kurfürst," was lost in the English Channel in 1878, and has not been replaced. Only 2 monitors, and no floating batteries have been built, but instead of the latter and the other 5 monitors, 13 armoured gunboats have been acquired. The number of torpedo-boats has been increased, and at present the following is the list of ships in the German Fleet:—

I. ARMOUR-PLATED SHIPS.

Name.	Date of Launch.	Place of Build- ing.	Class.	Mean Draught of Water.	Material of Hull.	Maximum Thickness of Armour.		Armament.	Displacement in Tons (English).	Indicated Horse- power of Engines (Maximum).	Number of Tor- pedo Tubes.	Strength of Crew.	Remarks.
						At Water- line.	On the Battery.						
König Wilhelm	1868	Blackwall	Broadside frigate.	26·5 ft.	Iron ..	ins. 12·0	ins. 8·0	18 24-cm. guns 4 21-cm. guns 7 15-cm. guns 6 machine-guns 4 field guns	9,608	8,000	5	780	Ram.
Friedrich Karl	1867	La Seyne (Toulon).	"	25·5	"	4·95	4·44	16 21-cm. guns 6 machine-guns 4 field guns	5,912	3,500	5	531	Ram.
Kronprinz ..	1867	Poplar ..	"	23·6	"	4·95	4·44	16 21-cm. guns 6 machine-guns 4 field guns	5,568	4,800	8(?)	537	Ram.
Hansa ..	1872	Stettin ..	Corvette..	20·6	Wood and iron.	8·16	6·16	8 21-cm. guns 4 field guns 6 machine-guns	3,553	3,000	..	398	
Preussen ..	1873	Bredow (Stettin).	Turret- ship.	23·7	Iron ..	9·16	10·21	4 26-cm. guns 2 17-cm. guns 6 machine-guns 4 field guns	6,663	5,400	5	537	Two movable turrets.
Friedrich der Grosse.	1874	Ellerbeck (Kiel).	"	23·81	"	9·16	10·21	4 26-cm. guns 2 17-cm. guns 6 machine-guns 4 field guns	6,663	5,400	5	537	Two movable turrets.
Kaiser ..	1874	Poplar ..	Frigate ..	24·4	"	9·9	10·0	8 26-cm. guns 7 15-cm. guns 6 machine-guns 4 field guns	7,555	8,000	5	638	Casemated bat- tery.

I. ARMOUR-PLATED SHIPS—continued.

Name.	Date of Launch.	Place of Building.	Class.	Mean Draught of Water.	Material of Hull.	Maximum Thickness of Armour.		Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Maximum).	Number of Torpedo Tubes.	Strength of Crew.	Remarks.
						At Water-line.	On the Battery.						
Deutschland ..	1874	Poplar ..	Frigate ..	24.4 ft.	Iron ..	ins. 9.9	ins. 10	8 26-cm. guns 7 15-cm. guns 6 machine-guns 4 field guns	7,555	8,000	5	638	Casemated battery.
Sachsen ..	1877	Bredow (Stettin)	Corvette..	19.68	Iron ..	15.83	..	6 26-cm. guns 4 field guns 6 machine-guns	7,283	5,600	5	356	These ships are designated "sortie corvettes," and are intended for the active defence of the Baltic coasts. They have only signal masts, and have two turrets, one (rectangular) amidships (4 guns) and one forward. Also a "sortie corvette," with only a single mast. The artillery is in a casemated battery amidships.
Baiern ..	1878	Ellerbeck (Kiel)	"	"	"	"	..	"	"	"	"	"	
Württemberg ..	1878	Bredow (Stettin)	"	"	"	"	..	"	"	"	"	"	
Baden ..	1880	Ellerbeck (Kiel)	"	"	"	"	..	"	"	"	"	"	
Oldenburg ..	1884	Bredow ..	"	"	Iron and steel.	11.8	8	8 24-cm. guns 4 field guns 8 machine-guns	5,118	3,900	6	"	

II. ARMOUR-PLATED GUNBOATS.

Name.	Date of Launch.	Place of Build- ing.	Mean Draught of Water.	Material of Hull.	Armour.		Armament.	Displacement in Tons (English).	Indicated Horse- power of Engines (Maximum).	Speed in Knots.	Crew.	Remarks.
					Maximum.	Minimum.						
Arminius ..	1864	England ..	13 10	Iron.	7½	ins. 4½	4 21-cm. guns 1 30.5-cm. gun, 2 machine-guns	1,558	1,200	11.25	131	Monitor, 1 torp.-tube.
Weepe ..	1876	Bremen .. (Schichau)	10 2	"	8	4	"	1,091	700	9.5	76	2 torp.-tube.
Viper ..	1876	"	"	"	"	"	"	"	"	"	"	2 torpedo- tubes.
Biene ..	1876	"	"	"	"	"	"	"	"	"	"	
Mücke ..	1877	"	"	"	"	"	"	"	"	"	"	
Skorpion ..	1877	"	"	"	"	"	"	"	"	"	"	
Basilisk ..	1878	"	"	"	"	"	"	"	"	"	"	
Camaeleon ..	1878	"	"	"	"	"	"	"	"	"	"	
Crocodil ..	1879	"	"	"	"	"	"	"	"	"	"	
1880	"	"	"	"	"	"	"	"	"	"	"	
Salamander ..	1880	"	"	"	"	"	"	"	"	"	"	
Natter ..	1881	"	"	"	"	"	"	"	"	"	"	
Hummel ..	1881	"	"	"	"	"	"	"	"	"	"	
Brunner ..	1884	"	11 7	Steel.	6.3	..	1 21-cm. gun and 4 machine-guns	852	1,500	14.5	73	
Bremes ..	1884	"	11 7	"	"	..	"	"	"	"	"	

(965)

Six more ("O" type,
3 000 tons) projected
by budget for 1887-88
for the defence of
mouths of large rivers
and of North Sea Canal.

N

III. SPAR-DECKED CORVETTES (CRUISERS).

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Maximum).	Speed in Knots.	Crew.	Remarks.
Leipzig ..	1875	Stettin ..	21 8	Iron ..	12 17-cm. guns 2 field guns (8-cm.) 6 Hotchkiss guns	3,963	4,800	15.0	434	New engines, 1886. 4 torpedo-tubes.
Prinz Adalbert Charlotte ..	1876 1885	Kiel .. Wilhelmshaven.	18 4	Iron and steel	14 15-cm. guns 2 field guns (8-cm.) 6 Hotchkiss guns	3,307	3,000	13.5	425	2 " "
Bismarck ..	1877	Gaarden, Kiel..	19 8	Iron ..	16 15-cm. guns 2 field guns (8-cm.) 6 Hotchkiss guns	2,811	2,500	13.5	403	2 " "
Moltke ..	1877	Danzig..	"	"	"	2,810	"	14.2	"	
Stoeh ..	1877	Stettin..	"	"	"	"	"	14.0	"	
Gneisenau ..	1879	Danzig..	18 9	"	"	"	"	15.0	"	
Stein ..	1879	Stettin..	19 8	"	"	"	"	13.5	"	

IV. FLUSH-DECKED CORVETTES. (CRUISERS).

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Max.).	Speed in Knots.	Crew.	Remarks.
Alexandrine ..	1885	Kiel ..	ft. ins. 17 2	Iron and steel	8 15-cm. guns 4 10 "6-cm. guns 6 Hotchkiss guns	2,330	2,400	14	267	
Areona ..	1885	Wilhelmshaven								
Olga ..	1880	Stettin ..	18 4	Iron ..	8 15-cm. guns 2 12-cm. guns. 1 field gun (8-cm.). 4 Hotchkiss guns.	2,315	2,100	" "	" "	1 Torpedo-tube.
Carola ..	1880	" ..	" "	" "	" "	" "	" "	" 14	" "	}
Marie ..	1881	Hamburg	" 8	" "	" "	" "	" "	" 14.5	" "	
Sophie ..	1881	Danzig ..	" 8	" "	" "	" "	" "	" 15	" "	
Freya ..	1874	" ..	18 4	Composite	8 15-cm. guns 1 field gun (8-cm.). 4 Hotchkiss guns.	1,985	2,400		248	
Viktoria ..	1864	France ..	17 8	Wood ..	4 15-cm. guns 6 12-cm. guns 1 field gun (8-cm) 4 Hotchkiss guns	1,795	1,800	13.9	240	
Prinzess Wilhelm	1887	Kiel ..	21 0	Steel ..	4 Hotchkiss guns 6 long 15-cm. guns 8 short 15-cm. guns 2 boat guns	4,330	8,000	18	320	Probably 3 torpedo-tubes.
N ^o Irene ..	1887	Stettin ..	21 0	" "	6 Hotchkiss guns 6 long 15-cm. guns.. 8 short 15-cm. guns 2 boat guns 6 Hotchkiss guns	4,330	8,000	18	320	" "

(965)

V. GUN-VESSLS (CRUISERS OF THE "ALBATROSS" CLASS.

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (Engli-h).	Indicated Horse-power of Engines (Max.).	Speed in Knots.	Crew.	Remarks.
Adler ..	1883	Kiel ..	ft. ins.	Composite	4 15-cm. and 3 Hotchkiss guns	870	650	11.5	128	
Möwe ..	1879	Elbing ..	11 5	Iron ..	1 15-cm. gun.. 4 12.5-cm. guns 2 Hotchkiss guns	835	600	12.0	"	
Habicht ..	1879	" ..	" 6	Wood ..	2 15-cm. guns ..	834	600	10.5	"	
Nautilus ..	1871	Danzig ..	" 6	Wood ..	2 12-cm. guns ..	704	600	"	115	
Schwalbe ..	1887	Wilhelmshaven	14 9	Composite	8 long 10.1-cm. guns.. 4 Hotchkiss guns	1,100	1,500	13½	114	Has a torpedo-tube.
"B." ..	..	"	"	"	"	"	"	"	"	Building. Has a torpedo-tube.

VI. FIRST-CLASS GUNBOATS.

Eber ..	1887	Danzig ..	14 3	Composite	3 10.5 cm. guns 3 Hotchkiss guns	560	750	10.5	87	
Wolf ..	1878	Wilhelmshaven	9 10	Iron.	2 12.5-cm. guns .. 2 8-cm. guns 5 Hotchkiss guns	490	340	9.5	83	
Hyäne ..	1878	"	"	"	"	"	"	9.0	"	
Ilus ..	1878	Danzig	"	"	"	"	"	10.0	"	
Cyclop ..	1874	" ..	8 2	"	"	405	250	8.4	67	

VII. DESPATCH VESSELS.

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Maxim.).	Speed in Knots.	Crew.	Remarks.
Greif ..	1886	Kiel ..	13 10	Steel.	2 10·5-cm. guns .. 10 Hotchkiss guns	1,968	5,400	19	141	
Pfeil.. ..	1882	Wilhelmshaven	13 5	" (?)	1 12·5-cm. gun .. 4 8·7-cm. guns	1,360	2,700	15	127	1 torpedo-tube.
Blitz ..	1882	Gaarden, Kiel..	13 5	"	No guns ..	"	"	16·2	"	
Zieten ..	1876	England ..	12 10	Iron.	1 12-cm. gun..	960	2,350	16	111	2 torpedo-tubes.
Grille ..	1871	France.. ..	9 9?	Wood.	2 8-cm. guns .. 3 10·5-cm. guns	345	650	14·7	67	
Wacht ..	1887	Bremen ..	13 7	Steel.	10 Hotchkiss guns ..	1,220	4,000	18·5 (est.)	126	Probably 3 torpedo-tubes.

VIII. TORPEDO VESSELS.

Jäger ..	1883	Bremen ..	..	Steel ..	2 Hotchkiss guns ..	140	550	14	21	2 torpedo-tubes.
Schütze ..	1883	"	..	"	"	50	500	18	13	"
Scharf ..	"	"	..	"	"	"	"	"	"	"
Kühn ..	"	"	..	"	"	"	"	"	"	"
Vorwärts ..	"	"	..	"	"	"	"	"	"	"
Flink ..	"	"	..	"	"	"	"	"	"	"
Tapfer ..	"	"	..	"	"	"	"	"	"	"
Sicher ..	"	"	..	"	"	"	"	"	"	"
Torpedo-boats, Nos. I, II, and III. (?)	"	"	..	"	"	"	"	"	"	"
Mine-laying boats, Nos. I, II, III, and IV.	"	"	..	"	"	"	"	"	"	"

On 1st May, 1888, there were completed : 2 " Division " boats and 67 first class. There were building : 4 " Division " boats and 19 first class.

IX. TRAINING SHIPS.

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Maximum).	Speed in Knots.	Crew.	Remarks.
Mars ..	1879	Wilhelmshaven	ft. ins. ..	Iron ..	25 guns of various calibres.	3,280	2,000	..	236	Artillery training ship, Wilhelmshaven.
Blücher ..	1877	Gaarden, Kiel..	19 8	Iron ..	6 Hotchkies guns ..	2,810	2,500	12.0	206	Spar-decked corvette. Torpedo-training ship, 7 tubes.
Niobe ..	1862	England	..	Wood..	4 15-cm. guns 6 12-cm. guns 4 field guns (8 cm.) ..	1,270	..	..	220	Cadets' training ship. Sailing ship.
Nixe ..	1885	Danzig ..	..	..	10 guns.	1,722	700	10.5	116	Boys' training ship.
Ariadne ..	1871	"	18 4	Wood..	6 15-cm. guns. 2 12-cm. guns. 1 8-cm. guns.	1,690	2,100	13	124	Flush-decked corvette.
Luise ..	1872	"	17 0	"	4 Hotchkies guns	1,680	2,100	14.2	124	Sailing ship. Boys' training ship.
Rover ..	1862	England	..	"	6 8-cm. guns.	561	..	..	81	Tender to "Mars."
Musquito	1862	"	..	"	"	561	..	..	81	Tender to "Blücher."
Hay ..	1861	Danzig	7 9	Iron ..	4 8.7-cm. and 2 Hotchkies guns.	200	160	9.0	40	1 torpedo-tube.
Ulan ..	1876	Stettin..	10 2	"	1 gun.	370	800	12.0	41	

X. VESSELS FOR VARIOUS SERVICES.

Name.	Date of Launch.	Place of Building.	Mean Draught of Water.	Material of Hull.	Armament.	Displacement in Tons (English).	Indicated Horse-power of Engines (Max.).	Speed in Knots.	Crew.	Remarks.
Hohenzollern..	1875	Gaarden (Kiel)	ft. ins. 13 9	Iron ..	2 12-cm. guns ..	1,673	3,000	16·3	183	Imperial yacht (paddle steamer).
Falke ..	1871	Danzig	7 6	"	"	1,000	1,100	14·3	97	Protection of North Sea Fisheries (paddle steamer).
Pommernania ..	1870	Stettin	7 6	"	2 8-cm. guns ..	394	700	13·0	66	Survey ship. Paddle steamer.
Loreley ..	1871	Wilhelmshaven	8 3	"	1 12·5-cm. gun ..	390	360	9·2	57	Station ship at Constantinople.
Albatross ..	1871	Danzig	10 6	Wood..	2 8-cm. guns ..	704	600	10·5	115	Survey ship.
Rheiu ..	1867	"	3 7	Iron .	To be removed ..	490	200	10·0	23	Transport ship.
Eider ..	1887	Danzig	..	..	..	..	..	..	..	"
Borass..	..	..	..	..	..	381	900	..	..	..
Notus ..	..	..	..	..	..	..	600	..	..	..
Zephyr ..	..	..	..	..	..	..	250	..	..	..
Aeolus..	..	..	..	..	..	..	50	..	..	..
Swine ..	..	..	..	..	..	..	50	..	..	..
Jade ..	..	..	..	..	..	..	150	..	..	..
Motlau ..	..	..	..	..	..	..	320	..	..	..
Caurus..	..	..	..	..	..	..	150	..	..	..
Rival ..	..	..	..	..	..	190	250	..	..	..
Friedrichsmort ..	..	..	..	..	..	66	75	..	..	..
Norder ..	..	..	..	..	..	557	1,100	..	..	..
Otter ..	1877	Elbing ..	4 7	..	..	127	140	8	42	In the Cameroons.
Nachtigal ..	1885	Kiel ..	8 0	Iron ..	2 Hotchkiss guns	..	..	10·5	..	..

Steamers for harbour service.

"Wilhelmshaven," "Wangeroog," tugs at Wilhelmshaven.
 "Heppens," schooner for laying submarine mines at Wilhelmshaven.
 "Schillig," tender at Wilhelmshaven.
 "Aussen-Jade," "Minsener Sand," "Genius Bank," lightships in Jade Bay.
 "Reserve," reserve lightship.
 "Adlergrund I," lightship in the Baltic.
 "Adlergrund II," reserve lightship in the Baltic.
 "Usedom," cutter.

These ships are at present (1888) distributed as follows :—

West African Station :—"Habicht," "Cyclop" and "Nachtigal."
 East African Station :—"Möwe," and "Nautilus."
 Australian Station :—"Adler" and "Eber."
 East Asian Station :—"Wolf," and "Iltis."
 Mediterranean Station :—"Loreley."
 Training Squadron :—"Prinz Adalbert," "Moltke," "Gneisenau," and "Stein."
 Cruising Squadron :—"Bismarck" (flagship), "Carola," "Olga," and "Sophie."
 Guard Ship at Wilhelmshaven :—"Nixe."
 Guard Ship at Kiel :—"Hansa."
 In commission, headquarters, Kiel :—"Baiern."
 In commission, headquarters, Wilhelmshaven, "Mücke."

The remainder, except the training ships and several ships for special purposes, are out of commission, in reserve. They are divided between the two great naval ports of Kiel and Wilhelmshaven as follows :—

	Wilhelmshaven.	Kiel.
Armour-plated ships ..	{ "König Wilhelm." "Friedrich der Grosse." "Preussen." "Kronprinz." "Friedrich Carl."	{ "Kaiser." "Deutschland." "Sachsen." "Württemberg." "Baden." "Oldenburg."
Armour-plated gunboats ..	{ "Wespe." "Viper." "Skorpion." "Chamaeleon." "Salamander." "Brummer." "Bremsa."	{ "Arminius." "Biene." "Basilisk." "Crocodil." "Natter." "Hummel."
Spar-decked corvettes ..	{ "Charlotte." "Stosch."	{ "Leipzig." "Elizabeth."
Flush-decked corvette ..	{ "Arcona." "Marie." "Freya." "Viktoria."	{ "Alexandrine."
First class gunboat ..	{ "Hyäne."	
Despatch vessels ..	{ "Pfeil."	{ "Blitz." "Zieten." "Grille."

In these ports, each of them has its own particular store, containing all the ordnance and naval stores required for its equipment, and it is stated that each ship could be ready to put to sea in three or four days. The collection of the men would

take longer than this, but it is expected that the Fleet would be mobilized in about the same time as the Army, i.e., in eight days.

ORGANISATION OF THE NAVY.

(a.) *The Admiralty.*

At the head of the Navy is His Majesty the Emperor, who is assisted by the Chief of the Admiralty and Minister of Marine.* The Admiralty is divided into departments as follows:—

(1.) Central section (*Central-Abtheilung, M.*), for general administration of affairs, under a Corvette-Captain.

Sub-section M I.—*Personnel* of officers and officials of the Admiralty. Distribution of business and naval questions generally.

Sub-section M II.—*Personnel* of naval and marine officers, commissions, promotions, and appointments.

(2.) Command section (*Kommando-Abtheilung, A*) under the Chief of the Staff of the Admiralty, a Captain.

Sub-section Ia.—Employment of fleet in peace and war, commissioning, paying off, movements and changes of station.

Sub-section Ib.—Mobilisation and coast defences.

Sub-section II.—Education and training, ashore and afloat.

Sub-section IIIa.—Marines, calling out and dismissal of reserve and Seewehr.

Sub-section IIIb.—Establishments and organisation on shore. *Personnel* of naval branches.

(3.) Intelligence Department (*Statistisches-Bureau, St.*), under a Captain-Lieutenant. Fleets and coast defences of foreign powers.

(4.) Naval Department (*Marine-Departement, B and BI*), under a Rear-Admiral.

B. Sub-section IV.—Fitting out of ships and charge of dockyards.

Sub-section VI.—Building and repair of ships.

Sub-section VII.—Construction and repair of engines.

Sub-section IX.—Buildings and their repair in harbours and dockyards.

Sub-section K.—Constructive department; plans for building of ships.

* This Officer conducts the administration under the responsibility of the Imperial Chancellor, and exercises the chief command under the orders of the Emperor.

Sub-section Xa.—Dockyard administration.

Sub-section Xb.—Administrative affairs connected with dockyard and harbour building.

B I. Sub-section V. —Torpedoes and mines.

Sub-section VIIIa.—Artillery armament of ships and coast fortifications.

Sub-section VIIIb.—Construction of artillery material and small arms.

Sub-section VIIIc.—Submarine defences entrusted to seamen-gunners.

(5.) Administrative Department (*Verwaltungs-Departement*, C), under a naval official.

Sub-section IXa.—Admiralty buildings.

Sub-section X. —Pay.

Sub-section XI. —Garrison administration.

Sub-section XII. —Allowances, travelling allowances, and provisions.

(6.) Special sub-sections (*Besondere-Dezernate*).

Sub-section G.—Medical *personnel*.

Sub-section I.—Legal affairs.

(7.) Hydrographic office (*Hydrographisches Amt*, H).

Sub-section H.I.—Surveys, cartography, notices to mariners, lightships, &c.

Sub-section H.II.—Navigation, instruments, &c.

Under this office are also placed the observatory at Wilhelmshaven and the German maritime observation office at Hamburg.

(b.) *The Naval Stations (Marine Stationen).*

There are two naval stations, that of the Baltic with headquarters at Kiel, and that of the North Sea with headquarters at Wilhelmshaven, which are directly subordinate to the Admiralty, and are commanded by Vice-Admirals, with the rank of Divisional Commanders in the Army. The staff of each comprises 3 adjutants (2 naval and 1 marine), a director of surveys, a port-captain for the headquarters of the naval port, a medical officer in charge of the station, 2 officials of the judge-advocate's department, 3 or 4 chaplains, and a staff or chief engineer. Each has also its own Intendance, but the heads of these two departments correspond directly with the Admiralty, and are also consultative officials of the station commander.

Under the Vice-Admiral commanding the station are the ships in and out of commission, and the following details and establishments:—

Naval station of the Baltic—

1st Seamen Division, Kiel.

1st Dockyard Division, Kiel.

1st half-battalion of the Marine Battalion, Kiel.
 Division of ships' boys, Friedrichsort.
 The Dockyard at Danzig (discipline only).
 The Dockyard at Kiel (discipline only).

Naval station of the North Sea—

2nd Seamen Division, Wilhelmshaven.
 2nd Dockyard Division, Wilhelmshaven.
 2nd half-battalion of the Marine Battalion, Wilhelmshaven.
 The Dockyard at Wilhelmshaven (discipline only).

In each station the Seamen and Dockyard Divisions form a "Naval Inspection," at the head of which is a rear-admiral or naval captain as inspector with a captain-lieutenant as adjutant.

(c.) *Inspection of Marine Artillery (Inspektion der Marine Artillerie).*

At the head of this Inspection, the headquarters of which are at Wilhelmshaven, is a rear-admiral or captain of the Navy with a captain-lieutenant as adjutant. As stated in Chapter IX, Part II, in 1887 and 1888 the works at the mouths of the Weser and Elbe were handed over from the War Ministry to the Admiralty, as it is intended that in future the defence of all coast works shall be entrusted to the Navy. At present those at Kiel (Friedrichsort), Wilhelmshaven, and on the Lower Weser and Elbe (except Fort Grauerort) are in its charge, and this measure will probably soon be extended to the other coast defence works.

Under the inspection of Marine Artillery are placed—

The 1st Division of Seamen Gunners, Friedrichsort.
 „ 2nd „ „ Wilhelmshaven.
 „ 3rd „ „ Lehe.
 „ Artillery Dépôt at Friedrichsort.
 „ „ „ Wilhelmshaven.
 „ „ „ Geestemünde.
 „ „ „ Cuxhaven.
 „ Submarine Mine Dépôt at Friedrichsort.
 „ „ „ at Wilhelmshaven.
 „ „ „ Geestemünde (branch at Cuxhaven).
 „ Technical Experimental Committee.
 „ Gunnery School Ship.

The Inspector corresponds direct with the Admiralty, and is responsible for the drill, training, and equipment of the seamen gunners, the preservation of the ordnance stores, and the measures to be taken for putting the works in a state of defence.

(d.) *The Inspection of Submarine Mining (Inspektion des Torpedowesens).*

While the Inspection of Marine Artillery has charge of all

measures for laying down defensive mines, the Inspection of Submarine Mining attends to the offensive element, and under it are placed all the torpedo-vessels and boats in and out of commission, the torpedo detachments, the torpedo training ship, the torpedo experimental committee, and the torpedo dépôt at Friedrichsort. The Inspector, whose headquarters are at Friedrichsort, is a corvette-captain with a captain-lieutenant as adjutant.

(e.) *The Direction of Naval Education (Direktion des Bildungswesens der Marine).*

Under the Director of this department are the following educational establishments:—

The Naval Academy at Kiel.—This corresponds to the War Academy of the Army, and is meant to complete the higher professional instruction of naval officers. The course lasts two years, the theoretical portion of it, at the Academy, lasting 7 or 7½ months in each year, commencing in October, and the remainder of the time being passed in practical exercises, such as duty on board ship, surveying, or torpedo work. The subjects of theoretical instruction are mathematics, physics, chemistry, nautical astronomy, physical geography, geology, the organic life in the sea, modern languages, naval administration, military and naval law, the rights of belligerents, and the construction and arrangement of dockyards. About 15 officers are studying at this academy, and from them are recruited the officers of the Admiralty and Naval Staffs. The academy is under a corvette-captain as director.

The Naval School at Kiel corresponds to the War Schools of the Army. To it are sent for a six months' course, beginning in September, those cadets on probation who have been for six months at sea. On the termination of the course, they go up for their "Naval Cadets' Examination." After passing this examination, being two years at sea in a training ship, and passing their first officers' examination, they are sent as sub-lieutenants on probation to the higher course of this school, which lasts for ten months, from October to August, and at the close of which the second officers' examination is passed, the subjects of which are navigation, seamanship, naval tactics, artillery, naval engineering, torpedo work, naval construction, natural sciences, mechanics, fortification, military tactics, mathematics, drawing, English, and French. This school is under the same director as the Naval Academy, and has three corvette-captains as professors.

The Warrant Officers' School at Kiel, to complete the instruction of engineers, pilots, and torpedists.

RECRUITMENT OF THE NAVY.

The Navy is recruited from the men of the maritime popu-

lation who are exempted from service in the Land Army. By maritime population is understood all those men who, for a year at least, have been professional sailors or fishermen on the high seas or along the coasts, ship's carpenters, and engineers and stokers of deep sea or river steamers. The periods of service are the same as in the Army—obligatory service for all men from the 17th to 45th year, actual military service beginning at the twentieth year and lasting for three years in the Navy, four years in the Naval Reserve, five years in the first Ban of the *Seewehr*, which corresponds to the *Landwehr* of the Army, and till the 31st March of the 39th year of age in the second Ban of the *Seewehr*. The *Naval Ersatz-Reserve* comprises all men liable to service in the Navy who have not been taken for actual service, but who may be taken to fill up the establishment of the fleet in war. Service in it lasts for twelve years. After the conclusion of their service, men of the *Seewehr* pass to the *Landsturm*, and men of the *Naval Ersatz Reserve* to the 2nd Ban of the *Seewehr* or to the *Landsturm*, as in the Army.

The annual contingent to be furnished for the marine battalion, the seamen-gunners, and the dockyard divisions is divided among the Army Corps according to their population, but the seamen divisions are recruited exclusively from the maritime population. If the men furnished by the latter are not sufficiently numerous, the deficiency may be made good from the inland population, men of that class being entered as four-year volunteers. The following are the conditions of height, &c. :—

Seamen.—Good constitution, good eyesight, hearing, and speech, not colour-blind. Minimum height, 5 feet 1·7 inch.

Engineers and Assistant Engineers must be skilled men at their profession, and 5 feet 1·7 inch in height.

Stokers must have acted as such before. In case of need, puddlers, smiths, or charcoal burners may be taken as stokers. Minimum height, 5 feet 1·7 inch.

Naval Tradesmen must have exercised the trade of sailmaker, ship's carpenter, cooper, gunmaker, painter, baker, clerk, tailor, or shoemaker. No minimum height.

Marines must be fit for infantry duties and for handling heavy guns. Minimum height, 5 feet 5·6 inches.

Seamen Gunners.—Strong and handy enough to work the heaviest guns. Minimum height, 5 feet 5·6 inch.

As stated in Chapter V, at the end of the mustering period of recruiting operations, final lists are drawn up of all men liable to service in each Landwehr battalion district (*Vorstellungs-Listen*). Of these list F contains the names of the men detailed for the Navy. To the recruiting committees of the 1st, 3rd to 8th, 33rd to 37th and 40th Infantry Brigades, which comprise the maritime districts, are added for the recruiting of the Navy a naval officer (a captain at least) and a naval medical officer. The musters are put off till the 1st January following the preparation of the lists, to suit the convenience

of men at sea. The general operations of recruiting are precisely similar to those of the Army. The recruiting committee of the 36th Brigade performs naval recruiting operations for the whole of the rest of the territory not included in the brigades mentioned above.

One-year volunteers are received in the Marine Battalion, the Seamen Gunners Divisions, if engineers or naval architects in the Dockyard Divisions, and, if sailors, in the Seamen Divisions. In the Marines and Seamen Gunners they are placed in the ranks on 1st April and 1st October; in the Dockyard Divisions on 1st February and 1st October; and in the Seamen Divisions on the 1st February, 1st April, 1st July, and 1st October. They are trained, as in the Army, so as to furnish an efficient body of reserve officers, and they may in the same manner be given lance rank after six months' service.

Three and four year volunteers are also taken by all branches as in the Army, and are enlisted at the following dates:—

	Three-year Volunteers.	Four-year Volunteers.
Seamen divisions (only seamen taken, except as four-year volunteers, bandsmen, or aspirant paymasters) }	At all times {	1st February or 1st October.
Dockyard divisions (only engineers taken) ..	1st February	None.
Marine battalion }	1st October to	
Seamen Gunner divisions }	31st March	"

Commanders of ships of the Navy are authorised to raise one or three year volunteers from among German subjects living at foreign ports, so that in this way these can fulfil their military obligations without returning home. Volunteers for the duration of a war are also received.

The contingent of recruits raised for the Navy (exclusive of volunteers) numbered, in 1886, 1,452 men from the maritime, and 982 from the non-seafaring population. Of these, there were furnished by the:—

	Seafaring.	Non- seafaring.
1st Army Corps District ..	389	52
2nd " " ..	329	54
9th " " ..	550	99
10th " " ..	156	55
	1,424	260

the remainder being taken from other corps districts. It will be seen from the above figures how almost entirely the coast provinces find the sailors of the Navy.

OFFICERS, THEIR APPOINTMENT AND PROMOTION.

The officers of the Navy are divided into the following categories:—

- (a.) The Chief of the Admiralty.
- (b.) The Admirals.
- (c.) The Corps of Naval Officers (*See-Offizier-Corps*).
- (d.) The Officers of the Marine Battalion.
- (e.) The Engineer *Personnel* (*Maschinen-Ingenieur-Personal*).
- (f.) Naval Medical Officers.
- (g.) Artificer and Ordnance Officers (*Feuerwerks- und Zeug-Offiziere*).
- (h.) Torpedo-Officers and Engineers (*Torpedo Offiziere und Ingenieure*).
- (i.) Pensioned officers still employed, besides a category of officials with the standing of officers, viz. :—
- (k.) Naval Paymasters.

(a.) *The Chief of the Admiralty.*

See Page 361.

(b.) *The Admirals.*

There are 7 Admirals in the German Navy, 2 being Vice-Admirals (*Vize-Admiral*) with the rank of lieutenant-general and 5 Rear-Admirals (*Contre-Admiral*) with the rank of major-general, all of whom hold active appointments. They are selected from among the Captains who have held command of an armour-plated ship or a cruiser corvette for some time.

(c.) *The Corps of Naval Officers.*

The various grades in the "Corps of Naval Officers," (which comprises all the combatant officers of the Fleet), with their corresponding ranks in the Army are as follows:—

Captain (<i>Kapitain zur See</i>)	Colonel.
Corvette-Captain (<i>Korvetten Kapitain</i>) ..	Lieutenant - Colonel or Major.
Captain-Lieutenant (<i>Kapitain Lieutenant</i>)..	Captain.
Lieutenant (<i>Lieutenant zur See</i>)	1st Lieutenant.
Sub-Lieutenant (<i>Unter-Lieutenant zur See</i>)..	2nd Lieutenant.

And, although they are not officers, we may also include—

Naval Cadet (<i>See Cadett</i>)*	Ensign.
Cadet (<i>Cadett</i>),	

but the latter are not wholly subject to naval law and do not take the oath of allegiance.

The total number of Naval Officers, according to the budget for 1888-9, is 527, of whom 30 are captains, 56 corvette-captains, and the remainder captain-lieutenants, lieutenants, and sub-lieutenants. 100 naval cadets are also

* The German *See Cadett* corresponds to the Midshipman of the British Navy.

borne on the budget on the establishment of the 1st Seamen Division.

As in the land Army, the officers are recruited either from cadets or from persons who join as seamen with a view to becoming officers.

Applications to enter as cadets must be received at the Admiralty in August or September. If they have passed the final examination at a gymnasium or *Real* school of the 1st class, applicants may be 19 years of age and are dispensed from further examination if they have received "good" in mathematics; those who have not passed the above examination may only be 18 years of age, and they, with those mentioned above who have not been well mentioned in mathematics, have to pass an examination of similar scope to that named above. If successful, they are entered as cadets, join in the following April, are sent to sea for six months, and their subsequent course of training is described at page 364. On passing their "First Officer's Examination," they are appointed temporary sub-lieutenants, subject to the "choice" of all the officers of the Navy at Kiel, and their commissions are only made permanent after a further course of study of ten months (October to August) at the Naval School, and on their passing the "Second Officers' Examination."

Those persons who enter as seamen with a view to becoming officers may, after having given proofs of aptitude as in the Army, and having served for a year on board a ship, if not over twenty years of age, be proposed by the commander of their division for permission to present themselves for an examination the same as the "Naval Cadet's Examination." On passing this, their further course of training is the same as that for cadets.

For purposes of promotion, Naval officers are divided into three categories, the Admiralty Staff (*Admiral-Stab*) corresponding to the General Staff of the Army, the Naval Staff (*Marine-Stab*), and the Corps of Naval Officers (*See-Offizier-Korps*). The first named consists of 3 Captains, 9 Corvette-Captains, and 8 Lieutenants, all officers who have distinguished themselves particularly by their attainments and services. Their special duty is to deal with all questions affecting the organisation, development, and employment of the Navy. The officers of the Naval Staff are selected for their scientific acquirements, and hold permanently various technical appointments. The remainder of the officers do duty on board the ships or with the seamen, dockyard, or seamen gunner divisions.

A sub-lieutenant must serve five years at sea before he can be promoted to lieutenant, and for promotion to captain-lieutenant he must also have "several" years' sea-service as lieutenant. As lieutenants or captain-lieutenants, officers may pass through the Naval Academy course. For promotion to corvette-captain, a captain-lieutenant must have been for a whole year first officer of a vessel, and before promotion to

captain an officer must have two years' sea-service as commander of a small ship, or as first officer of an armour-clad ship.

Officers of the Reserve, or *Seewehr*, are appointed and promoted much as in the Army. The Navy List for 1888 shows 127 Reserve Officers.

(d.) *Officers of the Marine Battalion.*

The Marine Battalion has 34 officers, who are recruited by transfers in the rank of 2nd lieutenant from the Army, their promotion then proceeding in the battalion on the same conditions, &c., as in the Army.

(e.) *The Engineer Personnel.*

The Naval Engineers number 48 officers, who are recruited from among the warrant officers of their branch. Their hierarchy has four grades, Staff Engineer (*Stabs-Ingenieur*), ranking with corvette-captain, Chief Engineer Officer (*Maschinen Ober Ingenieur*), ranking with captain-lieutenants, Engineer Officer (*Maschinen Ingenieur*) ranking with lieutenants, and Sub-Engineer Officer (*Maschinen Unter-Ingenieur*), ranking with sub-lieutenants. For appointment as an officer in this branch, an examination has to be passed, and for this purpose candidates are sent to the Warrant Officer's School. They must be "chosen" by their future brother officers, and are commissioned by the Emperor.

(f.) *Naval Medical Officers.*

The total number of Naval Medical Officers is 87, and they are recruited in the same manner as those of the Army.

(g. and h.) *Artificer, Ordnance, and Torpedo Officers.*

The number of officers of the two former categories is 29, that of the Torpedo Officers is 17, viz., 5 Torpedo Engineers and 12 Torpedo Captain-Lieutenants, &c. All are recruited from the ranks, the two former from warrant officers of the artillery depôts, the latter from those of the torpedo depôts. They are distributed among those depôts and in the various technical establishments of the Navy, and have to pass through the Artificers School at Berlin before appointment.

The grades in the corps of artificer and ordnance officers are as in the Army; those of the torpedo officers are Torpedo Captain-Lieutenants, Lieutenants, and Sub-Lieutenants.

(i.) *Pensioned Officers still employed.*

The number of these officers is only 11, and they are distributed among the offices of the stations and ports.

(k) Naval Paymasters.

There are 63 Naval Paymasters who are recruited in the same manner as in the Army.

WARRANT OFFICERS.

Warrant Officers (*Deck-Offiziere*) are recruited from among the petty officers, and are nominated by the Naval Inspectors and Inspectors of Marine Artillery and Submarine Mining, except the aspirant paymasters who are nominated by the commander of the naval stations. Their number according to the Budget for 1888-9, is as follows—

Seamen and Seamen Gunner divisions	..	122
Dockyard divisions	.. ..	300
Ship's boys' division	.. ..	1
Artillery depôts..	.. ..	41
Torpedo „ ..	.. ..	46
		<hr/> 510

They have to pass a written and an oral examination, and satisfy certain conditions special to each branch. The various grades are as follows—

1. Chief Boatswain (*Ober Bootsmann*).
2. Boatswain (*Bootsmann*).
3. Chief Master Gunner (*Ober Feuerwerker*).
4. Master Gunner (*Feuerwerker*).
5. Chief Store Keeper (*Ober-Materialen-Verwalter*).
6. Store Keeper (*Materialen-Verwalter*).
7. Chief Torpedist (*Ober Torpeder*).
8. Torpedist (*Torpeder*).
9. Chief Engineer (*Ober-Maschinist*).
10. Engineer (*Maschinist*).
11. Chief Master Tradesman (Sailmakers, &c.) (*Ober — Meister*).
12. Master Tradesman (*— Meister*).

Those numbered 1 and 2 are recruited from the seamen divisions, those numbered 3, 4, 7, and 8 from the artillery and torpedo depôt *personnel* respectively, and the remainder from the dockyard divisions.

NAVAL OFFICIALS.

Each station has an intendance office, at the head of which is an intendance councillor, who has under his orders a certain number of intendance officials and employés. Under each station intendance office are a clothing depôt, which supplies and keeps always ready for mobilisation the clothing and equipment required for the various divisions, a garrison administra-

tion which has charge of all naval buildings, and a hospital administration in charge of all hospital stores and furniture.

In the shipbuilding yards, dockyards, and arsenals of Danzig, Kiel, and Wilhelmshaven are employed a corps of engineers of naval construction and a corps of dockyard officials, the latter divided into the technical branch, the administrative branch, and the executive branch.

Finally, the list of officials is closed by those of the Naval Judge-Advocate's Department and the Chaplains' Department.

ORGANISATION OF THE PERSONNEL OF THE NAVY.

(a.) *The Seamen Divisions (Die Matrosen-Divisionen).*

These two Seamen Divisions, the 1st stationed at Kiel and the 2nd at Wilhelmshaven, form the training schools on land for recruit seamen, and the reservoirs from which the crews of the ships in commission are drawn, and to which those crews return when their ships are again placed out of commission. Each is divided into two *Abtheilungen*, each of three companies, the 1st, 3rd, and 5th forming the 1st, and the 2nd, 4th, and 6th companies the 2nd *Abtheilung*. When the number of men in these parent companies (*Stammkompagnien*) exceeds 250, one or more branch companies (*Zweigkompagnien*) can be formed. The division is commanded by a captain, assisted by an adjutant, and the *Abtheilung* by a corvette-captain, companies being commanded by captain-lieutenants, but the number of officers and men attached to each varies of course greatly according to the number of ships in commission. The total number of seamen shown in the Budget for 1887-8 as belonging to these divisions

was—

Warrant officers	..	..	..	..	108
Naval cadets	..	..	..	..	100
Petty officers	..	..	..	..	924
Band sergeants	..	..	..	..	5
Bandsmen	..	..	..	..	94
Seamen	..	..	..	..	6,574
Armourers	..	..	..	..	2
Total	..	..	..	..	7,807

The Budget for 1888-9 provides for an increase of 4 warrant officers, 10 petty officers, and 1 armourer.

Each division has a paymaster and a medical officer attached and a band of its own. All the naval cadets are attached to the 1st Division.

The recruits of the annual contingent join on the 1st February of each year, and are drilled for two months as infantry recruits before being sent on board one or other of the training ships, or ships in commission. They are usually kept about six months before being sent to sea. One and three-year volunteers are kept in a company by themselves for the same

period. The men of the Seamen Divisions perform garrison duty in the naval ports.

(b.) *The Dockyard Divisions (Die Werft-Divisionen).*

The Dockyard Divisions supply the technical *personnel* for the Fleet and for work in the dockyards in the same way as the Seamen Divisions supply the combatant *personnel*. There are two of them also, the 1st at Kiel and the 2nd at Wilhelmshaven, each of 5 companies, but when one of those companies exceeds 250 men a new company may be formed. The 1st Company consists of engineers and paymasters (subordinate *personnel*), the 2nd and 3rd of stokers, the 4th of storekeepers, hospital assistants, sick attendants, armourers, bakers, and clerks, and the 5th of carpenters, sailmakers, painters, coopers, shoemakers, tailors, and other tradesmen.

The commander of a division is a captain, and those of companies are corvette-captains and captain-lieutenants, officers of the various technical branches being also added as instructors, and a lieutenant as adjutant of the division. The number of men shown in the Budget for 1887-8 as belonging to the Dockyard Divisions was—

Warrant officers	..	..	..	..	282
Petty officers	..	..	..	..	755
Lower ranks	..	..	..	..	2,228
Hospital assistants	..	..	..	..	105
Tradesmen	..	..	..	..	142
Armourer	..	..	..	..	1
Total	..	..	..	..	3,513

The Budget for 1888-9 provides for an increase of 18 warrant officers, 61 petty officers, 1 armourer, 8 lower ranks, and 11 hospital assistants.

A paymaster and a medical officer are attached to each division.

For their first two months' service, men joining the Dockyard Divisions are trained as infantry, but their further training is purely technical, and they are not armed with rifles and cutlasses like other sailors.

(c.) *The Marine Battalion (Das See-Bataillon).*

This battalion consists of 6 companies, of which the 3rd, 5th, and 6th, forming the 1st Half-Battalion, are stationed at Kiel, and the 1st, 2nd, and 4th, or 2nd Half-Battalion, at Wilhelmshaven. Its establishment is—

34 Officers.

112 Non-commissioned officers.

1 Band sergeant.

36 Bandsmen.

856 Lance-corporals and privates.

2 Armourers.

1,007 N.-C. officers and men.

Its duties are the defence of the Imperial naval ports, and the supply of detachments of marines to the ships of the Navy. According to the size of the ships, detachments of 1 or 2 officers and 40 to 80 men are embarked, but none are ever sent on board any but armour-plated ships. On board ship their duties are similar to those of the British Royal Marines. Their land training is the same as that of the infantry, but they do not attend the autumn manœuvres, and are put through a course of gun drill and rowing.

(d.) Seamen Gunner Divisions (Matrosen-Artillerie-Abtheilungen).

There are now four of these *Abtheilungen*, the 1st stationed at Friedrichsort (Kiel), the 2nd at Wilhelmshaven, the 3rd at Lehe (Weser Defences), and the 4th at Cuxhaven, and each is composed of three companies, with the exception of the 1st, which consists of four companies. The three *Abtheilungen* which existed in 1887 together had, according to the Budget for 1887-8—

Warrant officers	..	..	..	..	9
Petty officers	..	..	..	..	141
Buglers	..	..	..	..	2
Seamen Gunners	..	..	..	..	1,320
Armourers	..	..	..	..	8
Total	..	..	..	..	1,475

The Budget for 1888-9 provides for an increase of 1 warrant officer, 16 petty officers, 1 drummer, and 147 seamen gunners. In the estimates for that financial year the numbers of the Seamen Gunner Divisions are included in those of the Seamen Divisions.

Each *Abtheilung* is commanded by a corvette-captain.

The duties of these seamen gunners are entirely confined to the coast defences—in fact they are a “Coast Defence Corps,” and as such will be gradually augmented so as to free the foot artillery of the land Army from this part of their duties. Already the works on the Lower Weser and Elbe, at Wilhelmshaven, and at Friedrichsort are in their hands, and those at the remaining ports on the Baltic will shortly follow, thus placing the whole system of coast defence, afloat and ashore, in the hands of the Navy. The seamen gunners have also charge of all the submarine mining arrangements, and the

blocking of channels, removal of buoys, and other defensive measures.

The recruits join in November, and are trained as infantry till March, when gun drill with pieces of the various calibres employed in coast defences is begun. In June, arming of batteries and exercises of attack and defence are carried out, and the rest of the year till the dismissal of the recruits is devoted to submarine mining practice.

(e.) *The Ship-Boys' Division.*

This Division, the headquarters of which are at Friedrichsort, is established for the same purpose as the Under Officers' Schools in the Army—to supply petty officers for the Seamen Divisions. Its establishment is 1 warrant officer, 10 petty-officers, and 500 boys. The boys join, generally in the month of April, with the consent of their parents or guardians, at from 15 to 17 years of age, and engage to serve—in addition to the legal three years—two years for each of the three years passed in the Division, *i.e.*, 12 years in all. After being medically inspected and clothed, they are embarked for six months on board one of the training brigs, and are then sent on shore into barracks at Friedrichsort, where they are put through a theoretical and practical course of instruction in various subjects, and trained in infantry and artillery drill till the following spring.

In the beginning of their second year of service the boys are again embarked, this time in a training ship, and sent on a one year's cruise, generally to the West Indies, South America, or the Mediterranean, during which theoretical and practical instruction still go on hand in hand. On their return to Kiel in September of their third year's service, four weeks' leave is granted. The best pupils are then sent on board the artillery training ship "Mars," to pass the artillery course and gain certificates as captains of gun-crews. Boys of special good conduct may be promoted to ship-boy petty officers in their third year of service, and, after passing the above course, may enter the Navy as 1st class seamen, while the remainder are transferred as seamen to the Seamen Divisions. The former, after 72 months' sea-time, of which 12 as 1st class seamen, may be promoted to petty officers. The boys do not take the oath of allegiance until they leave the Division.

(f.) *The Artillery and Mine Depôts.*

These depôts are under the Inspector of Marine Artillery, and in them are stored the guns and artillery and submarine mining stores required for the armament and equipment of the coast defence works. There is one of each description at Friedrichsort, Wilhelmshaven, Geestemünde, and Cuxhaven. An officer is in charge of each, and the subordinate *personnel* is

composed, for the artillery depôts, of 41 warrant and 24 non-commissioned officers.*

(g.) *The Torpedo Divisions.*

These were organised in October, 1887, and are under the Inspection of Submarine Mining. They form the depôts from which are taken the *personnel* for the crews of the torpedo-boats and for the working and care of torpedo material afloat and on shore. The 1st Division is stationed at Kiel, the 2nd at Wilhelmshaven. Each depôt will consist of a staff of an adjutant, surgeon, engineer officer, paymaster, and 6 clerks, &c., and a *personnel* of 389 of all ranks to be transferred from the Seamen and Seamen Gunner Divisions.

The *personnel* for the torpedo and mine depôts provided for in the Budget of 1887-8 consisted of 43 warrant officers and 17 petty officers, to which 3 warrant and 20 petty officers are added by the Budget of 1888-9.

Summary of Personnel.

The total Budgetary strength of the *personnel* of the German Navy for 1888-9 is—

Officers, &c. :—

Chief of the Admiralty	..	..	..	1
Admirals	..	..	..	7
Naval Officers	..	..	..	527
Marine Battalion Officers	..	..	..	24
Naval Engineers	..	..	..	48
Naval Medical Officers	..	..	..	87
Artificer and Ordnance Officers	..	..	..	29
Torpedo Officers	..	..	..	16
Naval Paymasters	..	..	..	68
Pensioned Officers employed	..	..	..	11
Total Officers, &c.	..	..	..	823

Warrant and N.-C. officers and men :—

Marine battalion	..	..	..	1,007
Dockyard divisions	..	..	..	3,612
Seamen, Seamen Gunners, and Torpedo divisions, and Artillery and Mine depôts				9,586
Ship's boys' division	..	..	..	511
Total warrant officers and N.-C. officers and men	..	..	..	14,716

besides the officials of the Intendence, Engineer, Dockyard, Judge-Advocate's, and Chaplains' Departments.

DOCKYARDS.

The Imperial Dockyards at Kiel (Ellerbeck), Wilhelmshaven,

* Exclusive of the *personnel* of the (1888) newly-formed depôts at Cuxhaven.

and Danzig are technical establishments placed directly under the Admiralty, in which a large proportion of the ships of the Navy are built, and in which all repairs, &c., are carried out. At the head of each is an admiral or captain, and the staff under him is divided into the following departments :—

- | | | | |
|-------------------------------------|----|----|--|
| (1.) Equipment Department | .. | .. | Director, a Naval Officer. |
| (2.) Artillery | " | .. | " |
| (3.) Shipbuilding | " | .. | " an Engineer of Naval
Constructions. |
| (4.) Engine-construction Department | .. | " | " |
| (5.) Dockyard Works | " | .. | " |
| (6.) Navigation | " | .. | a Naval Officer. |
| (7.) Administration | " | .. | an Intendence Official. |

The names of the various departments explain themselves generally, Nos. 1 to 4 being concerned wholly in the building and fitting out of ships, Nos. 5 to 7 in the construction and administration of the dockyard itself. Each dockyard has a school in which all employes can perfect their theoretical instruction and in which the subordinate *personnel* are theoretically trained for the higher posts.

The whole of the projected works at Kiel and Wilhelmshaven have now been carried out, and those dockyards may now be said to be in complete working order. The last great work completed was a floating dock at Wilhelmshaven in three sections, the centre one 110½ feet, the two outer ones 55½ feet long each; so that one large or three small ships can be accommodated at a time. A similar floating dock exists at Kiel, and at both places dry docks are provided.

Danzig is only a provisional dockyard, and the leading principle in its organisation has been to create an establishment in which in peace ships of all sizes, from cruisers downwards, can be built, and in which, in war, the repairs necessary in a fleet just returned from a naval engagement can be executed. It has a floating dock with horizontal slips.

THE NORTH SEA CANAL.

The canal which, under the above name, joins the Baltic and North Seas, and was sanctioned by the Reichstag on the 25th February, 1886, will be not only one of the finest engineering works of the nineteenth century, but will also be of the utmost importance for the defence of the coast line of the German Empire, by permitting of its fleet being assembled in either the North Sea or the Baltic without the ships proceeding round Cape Skaw, whereas an enemy's fleet will have to navigate the dangerous waters of the Skager-Rack and Kattegat. The canal is 98 kilometres or 65½ miles long, and its head is on the right bank of the Elbe, a little above Brunsbüttel. The canal passes by Rendsburg and enters the Bay of Kiel near Holtenau, 1½ mile to the north-west of Friedrichsort. Both ends are thus protected by works, the western by those on the Lower Elbe, the eastern by those of Friedrichsort, and, being entirely within

German territory, the Empire will have the sole disposal of the canal in case of war. Its dimensions will be 195 feet broad at the surface of the water, and $84\frac{1}{2}$ feet broad at the bottom. The depth of water is $27\frac{1}{2}$ feet, which will permit of the passage of the largest ships of war in the German Navy. At Holtenau a lock regulates the passage of ships into or from the Baltic. On the 3rd June, 1887, the late Emperor William laid the first stone of the lock at Holtenau, and the canal is expected to be completed within seven years. Its cost is estimated at 156 millions of marks (7,800,000*l.*).

NAVAL UNIFORMS.

As a rule, the uniforms of the Navy are very similar to those of the British Royal Navy, and it will only be necessary to state here the distinguishing badges and the badges of rank.

Naval officers have gilt metal epaulettes with a silver anchor in the field. Those of admirals have thick gold lace fringes with an eagle above the anchor, and for admirals two, for vice-admirals one, and for rear-admirals no silver stars. The epaulettes of captains and corvette-captains have the same fringes as those of admirals, but with no eagle above the anchor, and, for captains two, for corvette-captains no stars. The epaulettes of captain-lieutenants and lieutenants have fringes of thin gold lace with two stars for the former and none for the latter, those of sub-lieutenants have neither fringes nor stars. Shoulder-pieces of silver lace with black and red silk worked into them are worn in undress with the same badges of rank as on the epaulettes in gold, except that lieutenants have one star. On the cuffs of the sleeves, admirals have a gold band of lace $1\frac{1}{2}$ inch broad with two rows of narrow braid above it for admirals, one for vice-admirals, and none for rear-admirals; captains have four, corvette-captains three, captain-lieutenants two, and lieutenants one band of $\frac{1}{2}$ -inch lace on the cuff, and sub-lieutenants one band of $\frac{1}{4}$ -inch lace.

Medical Officers have dark blue velvet fields to and the staff of *Æsculapius* on their epaulettes and shoulder-pieces, and Engineer Officers black velvet fields to their epaulettes, with the anchor and a wheel, and black velvet collars.

The uniform of the Marine Battalion is dark blue tunics with white collars, shoulder-straps, and piping, yellow buttons, and an anchor with a rope wound round it on the shoulder-strap. The headdress is a shako like that of the rifles, and the forage cap is dark blue with a blue band and white piping. Other articles of clothing and equipment are as in the Infantry, with black belts. Officers' and non-commissioned officers' badges of rank are as in the Army.

Artificer and ordnance officers wear the same uniform as in the Army, but with white piping on the collars, and for ordnance officers a gilt anchor and crossed guns, for artificer officers a gilt F on the epaulettes and shoulder-pieces.

Naval officials wear naval uniforms but with silver buttons and lace. Paymasters have dark blue, officials of the Judge-Advocate's Department crimson, and Engineers of Naval Constructions black velvet fields to their epaulettes, all with silver anchors; the latter have also black velvet collars. Officials of the Intendance have silver, and those of the Dockyards yellow fields to their epaulettes, with a coat-of-arms and a silver anchor, the former having also dark blue velvet collars.

The cockade of the German Navy is the Imperial black, white, and red cockade. The flag is white, divided by a black cross with white edging into four equal fields. In the middle of the cross is a circular field containing the Prussian Eagle. The field in the upper corner next the staff has horizontal stripes of black, white, and red, and has in the middle the Iron Cross.

APPENDIX I.

PEACE DISTRIBUTION OF THE ARMY.

Guard Corps. Headquarters, Berlin.

1st Guard Infantry Division. — Berlin.	{	1st Guard Infantry Brigade.	{	1st Foot Guards.* Potsdam.
		—		3rd " " Berlin.
		Potsdam.		Guard Rifle Battalion. Potsdam.
2nd Guard Infantry Division. — Berlin.	{	2nd Guard Infantry Brigade.	{	Instructional Infantry Battalion. Potsdam.
		—		
		Berlin.		2nd Foot Guards. Berlin.
		3rd Guard Infantry Brigade.		4th " " Spandau.
		—		Guard Fusiliers. Berlin.
		Berlin.		
2nd Guard Infantry Division. — Berlin.	{	4th Guard Infantry Brigade.	{	1st Guard Grenadiers. Berlin.
		—		3rd " " Spandau.
		Berlin.		Guard Sharpshooter Battalion. Gross-Lichterfeld.
		4th Guard Infantry Brigade.		
		—		2nd Guard Grenadiers. Berlin.
		Berlin.		4th " " Coblenz.
Guard Cavalry Division. — Berlin.	{	1st Guard Cavalry Brigade.	{	Gardes du Corps Regiment. Staff, 1st, 2nd, and 5th sqns. Potsdam.
		—		3rd sqn. Berlin.
		Berlin.		4th sqn. Charlotten- burg.
		2nd Guard Cavalry Brigade.		Guard Cuirassiers. Berlin.
		—		
		Potsdam.		Guard Hussars. Potsdam.
Guard Field Artillery Brigade. — Berlin.	{	3rd Guard Cavalry Brigade.	{	1st Guard Lancers. Potsdam.
		—		3rd " " "
		Berlin.		
		2nd Guard Field Artillery (1st, 2nd, and Horse <i>Abth.</i>).		1st Guard Dragoons. Berlin.
		2nd " " " (1st, 2nd, and 3rd <i>Abth.</i>).		2nd " " "
				2nd Guard Lancers. "
Guard Field Artillery Brigade. — Berlin.	{	1st Guard Field Artillery (1st, 2nd, and Horse <i>Abth.</i>).	{	1st Guard Dragoons. Berlin.
		2nd " " " (1st, 2nd, and 3rd <i>Abth.</i>).		2nd " " "
				2nd Guard Lancers. "
Guard Foot Artillery Regiment. Staff, and 1st Batt. Spandau.				
2nd Batt. Küstrin.				
Guard Pioneer Battalion. Berlin.				
Railway Regiment. Berlin.				
Guard Train Battalion. Berlin.				

* Regiments against which "4 battns." is not placed, have only 3 battalions.

1st Army Corps. Headquarters, Königsberg.

1st Division. — Königsberg.	1st Infantry Brigade. — Königsberg.	1st Grenadiers.	Königsberg.
		33rd Fusiliers..	Staff, 1st and 2nd Batts. Königsberg.
	2nd Infantry Brigade. — Königsberg.	41st Infantry..	3rd Batt. Goldap. Staff and 1st Batt. Königsberg. 2nd Batt. Tilsit. Fus. Batt. Memel.
		3rd Grenadiers.*	Staff, 2nd and Fus. Batts. Gumbinnen.
2nd Division. — Danzig.	3rd Infantry Brigade. — Danzig.	43rd Infantry..	1st Batt. Insterburg. Staff, 1st and Fus. Batts. Königsberg.
		45th „ ..	2nd Batt. Pillau. Staff, 2nd and Fus. Batts. Lyck. 1st Batt. Lötzen.
	4th Infantry Brigade. — Danzig.	44th Grenadiers.	Staff, 1st and 2nd Batts. Danzig. Fus. Batt. Ortelsburg.
		44th Infantry†.	Staff and 1st Batt. Osterode. 2nd Batt. Deutsch Eylau. Fus. Batt. Soldau.
Cavalry Division of the 1st Army Corps. — Königsberg.	1st Cavalry Brigade. — Königsberg.	5th Grenadiers.	Staff, 1st and 2nd Batts. Danzig. Fus. Batt. Neufahrwasser. Danzig.
		128th Infantry.	Königsberg.
	2nd Cavalry Brigade. — Danzig.	3rd Cuirassiers.	Tilsit.
		1st Dragoons ..	Staff, 1st, 2nd, and 5th sqns. Insterburg.
1st Field Artillery Brigade. — Königsberg.	1st Field Artillery	12th Lancers ..	3rd and 4th sqns. Stallupönen. Allenstein.
		10th Dragoons.	Staff, 1st, 2nd, and 5th sqns. Danzig.
	16th „ „	1st Hussars ..	3rd and 4th sqns., Preuss. Stargardt.
		8th Lancers‡ ..	Staff, 1st, 2nd and 5th sqns. Riesenburg. 3rd sqn. Rosenberg in W. Prussia.
1st Foot Artillery Regiment	1st Field Artillery	4th sqn. Deutsch Eylau.	(1st, 2nd, and Horse Abth.). Königsberg.
		Staff, 1st and 3rd Abth. Danzig.	2nd Abth. Allenstein (temp. at Graudenz).
	1st Rifle Battalion§	1st Foot Artillery Regiment ..	Königsberg.
		1st Rifle Battalion§	Allenstein.
1st Pioneer Battalion	1st Train Battalion	1st Pioneer Battalion	Danzig.
		1st Train Battalion	Königsberg.

2nd Army Corps. Headquarters, Stettin.

3rd Division. — Stettin.	5th Infantry Brigade. — Stettin.	2nd Grenadiers.	Stettin.
		34th Fusiliers..	Staff, 1st and 2nd Batts. Stettin.
		42nd Infantry..	3rd Batt. Swinemünde. Staff, 1st and 2nd Batts. Stralsund. Fus. Batt. Greifswald.

* The Staff, 1st and 2nd Batts., to be quartered at Allenstein, the Fus. Batt. at Ortelsburg, when the necessary accommodation is completed.

† The Staff, 1st and 2nd Batts., to be quartered at Deutsch Eylau when accommodation is completed.

‡ Under orders to join 1st Cav. Brigade at Lyck, with a squadron at Goldap and one at Markgrabowa.

§ To be quartered at Osterode when the above-mentioned changes are carried out.

3rd Division. — Stettin.	6th Infantry Brigade. — Stettin.	9th Grenadiers.	Stargard.
		54th Infantry..	Staff, 1st and 2nd Batts. Col- berg.
	3rd Cavalry Brigade. — Stettin.	2nd Cuirassiers	Fus. Batt. Coeslin.
		3rd Dragoons*.	Pasewalk.
4th Division. — Bromberg.	7th Infantry Brigade. — Bromberg.	3rd Dragoons*.	Staff, 1st, 2nd, and 5th Sqns. Treptow.
		9th Lancers ..	3rd and 4th Sqns. Greiffenberg.
	8th Infantry Brigade. — Thorn.	49th Infantry..	Demmin.
		129th „ (4 batts.)	Gnesen.
	4th Cavalry Brigade. — Bromberg.	14th Infantry..	Staff, 1st, 2nd, and 3rd Batts. Bromberg.
		(4 batts.)	4th Batt. Inowrazlaw.
	2nd Field Artillery	4th Batt. Graudenz.	Staff, 1st, 2nd, and 3rd Batts.
		4th Batt. Strassburg in West Prussia.	
	17th „ „	21st „ ..	Thorn.
		61st „ ..	„
2nd Field Artillery Brigade. — Stettin.	2nd Field Artillery	11th Dragoons.†	Bromberg.
		5th Hussars‡ ..	Staff, 2nd, 3rd, and 5th sqns. Stolp.
	17th „ „	4th Lancers ..	1st sqn. Schlawe.
		4th Lancers ..	4th sqn. Coeslin.
	2nd Foot Artillery Regiment ..	Staff, 1st and 2nd <i>Abth.</i> Stettin.	
		(1st <i>Abth.</i> temp. at Gollnow).	
	11th Foot Artillery Regiment..	Horse <i>Abth.</i> Belgard.	
5th Division. — Frankfurt on the Oder.	9th Infantry Brigade. — Frankfurt.	8th Grenadiers.	Staff, 2nd and 3rd <i>Abth.</i> Brom- berg.
		48th Infantry..	1st <i>Abth.</i> Graudenz (temp. at Colberg).
	10th Infantry Brigade. — Frankfurt.	12th Grenadiers.	Staff and 1st Batt. Swinemünde.
		52nd Infantry..	2nd Batt. Danzig.
6th Division. — Brandenburg.	5th Cavalry Brigade. — Frankfurt.	2nd Dragoons..	Thorn.
		12th „ ..	Culm.
	11th Infantry Brigade. — Brandenburg.	3rd Lancers ..	Thorn.
		20th Infantry..	Alt Damm.
	11th Infantry Brigade. — Brandenburg.	85th Fusiliers..	

3rd Army Corps. Headquarters, Berlin.

5th Division. — Frankfurt on the Oder.	9th Infantry Brigade. — Frankfurt.	8th Grenadiers.	Frankfurt on the Oder.
		48th Infantry..	Cüstrin.
	10th Infantry Brigade. — Frankfurt.	12th Grenadiers.	Frankfurt on the Oder.
		52nd Infantry..	Staff, 2nd and Fus. Batts. Cott- bus.
6th Division. — Brandenburg.	5th Cavalry Brigade. — Frankfurt.	2nd Dragoons..	1st Batt., Croseen.
		12th „ ..	Schwedt on the Oder.
	11th Infantry Brigade. — Brandenburg.	3rd Lancers ..	Frankfurt on the Oder.
		20th Infantry..	Staff, 3rd, 4th, and 5th sqns. Fürstenwalde.
	11th Infantry Brigade. — Brandenburg.	85th Fusiliers..	1st and 2nd sqns. Beeskow.

* To be transferred to 4th Cav. Brigade in place of 11th Dragoons.

† To be transferred to 2nd Cav. Brigade in place of 8th Lancers.

‡ To be transferred to 3rd Cav. Brigade in place of 3rd Dragoons.

6th Division. — Brandenburg.	12th Infantry Brigade. — Brandenburg.	24th Infantry..	Staff, 1st and 2nd Batts. Neu- Ruppin.
		64th " ..	Fus. Batt. Havelberg. Staff, 1st and 2nd Batts. Prenz- lau. Fuz. Batt. Angermünde.
	6th Cavalry Brigade. — Brandenburg.	6th Cuirassiers.	Brandenburg.
		3rd Hussars ..	Rathenow.
3rd Field Artillery Brigade. — Berlin.	3rd Field Artillery	11th Lancers ..	Perleberg.
			Staff and Horse <i>Abth.</i> Branden- burg.
	18th " "		1st <i>Abth.</i> Wittenberg.
			2nd <i>Abth.</i> Jüterbog.
			Staff, 1st and 3rd <i>Abth.</i> Frank- furt.
			2nd <i>Abth.</i> Landsberg.
	3rd Foot Artillery Regiment ..		Mainz.
	3rd Rifle Battalion		Lübben.
	3rd Pioneer Battalion		Torgau.
	3rd Train Battalion		Spandau.

4th Army Corps. Headquarters, Magdeburg.

7th Division. — Magdeburg.	13th Infantry Brigade. — Magdeburg.	26th Infantry..	Magdeburg.
		66th " ..	"
	14th Infantry Brigade. — Magdeburg.	27th Infantry..	Staff, 1st and 2nd Batts. Mag- deburg.
		93rd " ..	Fus. Batt. Halberstadt. Staff and 1st Batt. Dessau. 2nd Batt. Bernburg. Fus. Batt. Zerbst.
8th Division. — Erfurt.	7th Cavalry Brigade. — Magdeburg.	10th Hussars ..	Stendal.
		16th Lancers ..	Staff, 1st, 2nd, and 3rd sqns. Salzwedel.
	15th Infantry Brigade. — Erfurt.	36th Fusiliers..	3rd and 4th sqns. Gardelegen. Staff, 1st and 3rd Batts. Halle. 2nd Batt. Erfurt.
		71st Infantry..	Staff, 2nd and Fus. Batt. Erfurt. 1st Batt. Sonderhausen.
	16th Infantry Brigade. — Erfurt.	72nd Infantry..	Torgau.
		96th " ..	Staff and 1st Batt. Altenburg. 2nd Batt. Gera.
4th Field Artillery Brigade. — Magdeburg.	8th Cavalry Brigade. — Erfurt.	7th Cuirassiers.	Fus. Batt. Rudolstadt. Staff, 1st, 2nd, and 5th sqns. Halberstadt.
		12th Hussars ..	3rd and 4th sqns. Quedlinburg. Staff, 3rd, 4th, and 5th sqns. Merseburg.
	4th Field Artillery		1st and 2nd sqns. 'Weissenfels.'
			Staff and 1st <i>Abth.</i> Magdeburg. 2nd <i>Abth.</i> Burg.
	19th " "		Horse <i>Abth.</i> Naumburg.
			Staff, 1st and 3rd <i>Abth.</i> Erfurt. 2nd <i>Abth.</i> Torgau.
	4th Foot Artillery Regiment ..		Staff and 1st Batt. Magdeburg. 2nd Batt. Ehrenbreitstein.
	4th Rifle Battalion		Naumburg.
	4th Pioneer Battalion		Magdeburg.
	4th Train Battalion		"

5th Army Corps. Headquarters, Posen.

9th Division. — Glogau.	17th Infantry Brigade. — Glogau.	58th Infantry..	Staff, 1st and 2nd Batt. Glogau.	
		59th " ..	Fus. Batt. Fraustadt. Staff and 1st Batt. Glogau.	
	18th Infantry Brigade. — Glogau.	7th Grenadiers	2nd Batt. Freistadt.	
		19th Infantry..	Fus. Batt. Wohlau.	
	9th Cavalry Brigade. — Glogau.	5th Cuirassiers	Liegnitz. Staff, 1st and Fus. Batts. Gör- litz.	
		4th Dragoons ..	2nd Batt. Jauer.	
	10th Division. — Posen.	19th Infantry Brigade. — Posen.	6th Grenadiers.	Staff, 1st, 3rd, and 4th sqns. Lissa.
			46th Infantry..	2nd sqn. Guhrau.
		20th Infantry Brigade. — Posen.	37th Fusiliers..	5th sqn. Bojanowo.
			47th Infantry..	Lüben.
10th Cavalry Brigade. — Posen.		50th " ..	Züllichau.	
		2nd Hussars ..	Posen.	
5th Field Artillery Brigade. — Posen.		5th Field Artillery	6th Grenadiers.	Posen.
			1st Lancers ..	"
		20th " " 	37th Fusiliers..	Staff, 1st and 3rd Batts. Kro- toeschin.
			2nd Hussars ..	2nd Batt. Ostrowo.
	5th Foot Artillery Regiment ..	47th Infantry..	Staff, 1st and Fus. Batt. Posen.	
		5th Rifle Battalion	2nd Batt. Schrimm.	
	5th Pioneer Battalion	50th " ..	Staff, 1st and 2nd Batts. Ra- witsch.	
		5th Train Battalion	Fus. Batt. Lissa.	
	5th Foot Artillery Regiment ..	2nd Hussars ..	Posen.	
		5th Rifle Battalion	Staff, 1st, 2nd, 3rd, and 5th sqns. Militsch.	
5th Pioneer Battalion	1st Lancers ..	4th sqns. Ostrowo.		
	5th Train Battalion	Staff, 1st <i>Abth.</i> Sprottau.		
5th Foot Artillery Regiment ..	2nd Hussars ..	2nd <i>Abth.</i> Glogau.		
	5th Rifle Battalion	Horse <i>Abth.</i> Sagan.		
5th Pioneer Battalion	50th " ..	Staff, 1st, 2nd, and 3rd <i>Abth.</i> Posen.		
	5th Train Battalion	Posen.		
5th Foot Artillery Regiment ..	2nd Hussars ..	Posen.		
	5th Rifle Battalion	Hirschberg.		
5th Pioneer Battalion	50th " ..	Glogau.		
	5th Train Battalion	Posen.		

6th Army Corps. Headquarters, Breslau.

11th Division. — Breslau.	21st Infantry Brigade. — Breslau.	10th Grenadiers.	Staff, 1st and 2nd Batt. Breslau. Fus. Batt. Freiburg.	
		88th Fusiliers..	Staff, 1st and 2nd Batt. Schweid- nitz. 3rd Batt. Reichenbach.	
		22nd Infantry Brigade. — Breslau.	11th Grenadiers. Breslau.	
	11th Cavalry Brigade. — Breslau.	51st Infantry ..	Staff, 2nd and Fus. Batt. Brieg. 1st Batt. Breslau.	
		18th Infantry.. (4 batts.)	1st Cuirassiers.	Breslau.
			8th Dragoons ..	Staff, and 1st sqn. Oels. 2nd sqn. Kreutzburg. 3rd sqn. Bernstadt. 4th and 5th sqns. Namslau.
12th Division. — Neisse.	23rd Infantry Brigade. — Neisse.		4th Hussars ..	Staff, 1st 2nd, and 5th sqns. Ohlau. 3rd and 4th sqns. Strehlen.
		18th Infantry.. (4 batts.)	Staff, 1st, 3rd, and 4th Batts. Gleiwitz.	
		62nd Infantry..	2nd Batt. Beuthen. Staff, 1st and 2nd Batts. Cosel. Fus. Batt. Ratibor.	

12th Division. — Neisse.	24th Infantry Brigade. — Neisse.	22nd Infantry..	Glatz.
		23rd " ..	Neisse.
	12th Cavalry Brigade. — Neisse.	63rd " ..	Staff, 1st and 2nd Batts. Neisse. Fus. Batt. Oppeln.
		6th Hussars ..	Staff, 2nd and 4th sqns. Neu- stadt.
6th Field Artillery Brigade. — Breslau.	6th Field Artillery	2nd Lancers ..	1st sqn. Leobschütz. 3rd sqn. Ober Glogau. 5th sqn. Ziegenhals. Staff, 1st, 3rd, and 5th sqns. Ratibor. (5th temporarily at Gleiwitz.)
			2nd sqn. Pless. 4th sqn. Sohrau.
	21st " "		Staff, 1st and 2nd <i>Abt.</i> Bres- lau.
			Horse <i>Abt.</i> Schweidnitz.
	6th Foot Artillery Regiment ..		Staff, 1st and 3rd <i>Abt.</i> Neisse. 2nd <i>Abt.</i> Grottkau.
			Staff and 2nd Batt. Neisse. 1st Batt. Glogau. (3rd and 4th cos. temporarily at Glatz.)
	6th Rifle Battalion		Oels.
		6th Pioneer Battalion	Neisse.
	6th Train Battalion		Breslau.

7th Army Corps. Headquarters, Münster.

13th Division. — Münster.	25th Infantry Brigade. — Münster.	13th Infantry..	Münster. (4th Batt. temporarily at Paderborn.)
		53rd Infantry..	Staff, 1st, 3rd and 4th Batts. Aix-la-Chapelle.
	26th Infantry Brigade. — Minden.	2nd Batt. Jülich.	
		15th Infantry..	Minden.
14th Division. — Düsseldorf.	13th Cavalry Brigade. — Münster.	55th " ..	Staff, and Fus. Batt. Detmold. 1st Batt. Höxter.
		4th Cuirassiers.	2nd Batt. Bielefeld.
	27th Infantry Brigade. — Düsseldorf.	8th Hussars ..	Münster.
			Staff, 2nd and 5th sqns. Pader- born.
7th Field Artillery Brigade. — Münster.	28th Infantry Brigade. — Wesel.	1st, 3rd, and 4th sqns. Neuhaus. Cologne.	
		16th Infantry..	
	14th Cavalry Brigade. — Düsseldorf.	(4 batts.)	Düsseldorf. (4th Batt. tem- porarily at Lippstadt.)
		39th Fusiliers..	Staff, 1st and 2nd Batts. Wesel. Fus. Batt. Cleve.
	7th Field Artillery	56th Infantry..	Wesel.
		57th " ..	
	22nd " "	11th Hussars ..	Staff, 1st, 2nd, 3rd, and 4th sqns. Düsseldorf.
		5th Lancers ..	5th sqn. Benrath. Düsseldorf.
	7th Foot Artillery Regiment ..		Staff, 1st and 2nd <i>Abt.</i> Wesel. Horse <i>Abt.</i> Osnabrück.
		9th Foot Artillery Battalion ..	Staff, 1st and 3rd <i>Abt.</i> Mün- ster. (3rd <i>Abt.</i> temporarily at Soest.)
	7th Rifle Battalion		2nd <i>Abt.</i> Minden.
		7th Pioneer Battalion	Cologne.
	7th Train Battalion		Cologne. (Attached to 7th Regi- ment.)
			Bückeburg.
			Deutz.
			Münster.

8th Army Corps. Headquarters, Coblenz.

15th Division. — Cologne.	29th Infantry Brigade. — Cologne.	{	40th Fusiliers..	Cologne.
			(4 batts.)	
	30th Infantry Brigade. — Coblentz.	{	65th Infantry..	"
			(4 batts.)	
	15th Cavalry Brigade. — Cologne.	{	28th Infantry..	Staff. Coblenz.
				1st and Fus. Batt. Ehrenbreitstein.
16th Division. — Trier.	31st Infantry Brigade. — Trier.	{	68th " ..	2nd Batt. Bonn.
				Staff, and 1st Batt. Coblenz.
	32nd Infantry Brigade. — Saarbrücken.	{	2nd Batt. Diez.	Fus. Batt. Ehrenbreitstein.
	16th Cavalry Brigade. — Trier.	{	8th Cuirassiers.	Deuts.
			7th Hussars ..	Bonn.
8th Field Artillery Brigade. — Coblentz.	31st Infantry Brigade. — Trier.	{	29th Infantry..	Trier.
			69th " ..	"
	32nd Infantry Brigade. — Saarbrücken.	{	30th " ..	Saarlouis.
			70th " ..	Saarbrücken.
	16th Cavalry Brigade. — Trier.	{	7th Dragoons ..	Saarbrücken.
			9th Hussars ..	Trier.
8th Field Artillery Brigade. — Coblentz.	8th Field Artillery	{	Staff and 1st <i>Abth.</i>	Saarlouis.
			2nd <i>Abth.</i> Jülich.	
	23rd " "	{	Horse <i>Abth.</i> Metz.	
			(1st, 2nd, 3rd <i>Abth.</i>)	Coblentz.
8th Foot Artillery Regiment	8th Foot Artillery Regiment	{	Metz. (8th coy. at Diedenhofen.)	
			8th Pioneer Battalion	Coblentz.
			8th Train Battalion	Ehrenbreitstein.

9th Army Corps. Headquarters, Altona.

17th Division. — Schwerin.	83rd Infantry Brigade. — Altona.	{	75th Infantry..	Staff, and 1st Batt. Bremen.
			2nd Batt. Harburg.	
	84th Infantry Brigade. — Schwerin.	{	Fus. Batt. Stade.	
			76th " ..	Staff, 1st and 2nd Batts. Ham- burg.
	17th Cavalry Brigade. — Schwerin.	{	Fus. Batt. Lübeck.	
			89th Grenadiers.	Staff, 1st and 3rd Batts. Schwerin.
18th Division. — Flensburg.	34th Infantry Brigade. — Schwerin.	{	2nd Batt. Neu-Strelitz.	
			90th Fusiliers..	Staff, 1st and 3rd Batts. Ros- tock.
	17th Cavalry Brigade. — Schwerin.	{	2nd Batt. Wismar.	
	35th Infantry Brigade. — Flensburg.	{	17th Dragoons.	Ludwigslust.
			18th " ..	Parchim.
18th Division. — Flensburg.	36th Infantry Brigade. — Rendsburg.	{	84th Infantry..	Staff and Fus. Batt. Schleswig.
			1st Batt. Flensburg.	
	31st Infantry..	{	2nd Batt. Apenrade.	
			86th Fusiliers..	Staff, 1st and 2nd Batts. Flens- burg.
18th Division. — Flensburg.	36th Infantry Brigade. — Rendsburg.	{	3rd Batt. Sonderburg.	
			Altona.	
	85th " ..	{	Staff and 1st Batt. Rendsburg	
			2nd Batt. Neumünster.	
18th Division. — Flensburg.	85th " ..	{	Fus. Batt. Kiel.	

18th Division.	18th Cavalry Brigade.	15th Hussars ..	Wandsbeck.
Flensburg.	Altona.	16th " ..	Schleswig.
9th Field Artillery Brigade.	9th Field Artillery	Staff and 1st <i>Abth.</i>	Rendsburg.
Altona.	24th " "	2nd <i>Abth.</i>	Stade.
		Horse <i>Abth.</i>	Neumünster.
		Staff and 1st <i>Abth.</i>	Schwerin.
		2nd <i>Abth.</i>	Itzehoe (temporarily Mölln).
		3rd <i>Abth.</i>	Güstrow (9th battery, Neu Strelitz).
	9th Rifle Battalion	Ratzeburg.	
	14th "	Schwerin.	
	9th Pioneer Battalion	Rendsburg.	
	9th Train Battalion	"	

10th Army Corps. Headquarters, Hanover.

19th Division.	37th Infantry Brigade.	78th Infantry..	Staff and 2nd Batt.	Osnabrück.
—	Oldenburg.	91st " ..	1st Batt.	Emden.
Hanover.	38th Infantry Brigade.	73rd Fusiliers..	Fus. Batt.	Aurich.
	Hanover.	74th Infantry..	"	Oldenburg.
	19th Cavalry Brigade.	19th Dragoons	Oldenburg.	
	Hanover.	13th Lancers ..	Hanover.	
20th Division.	39th Infantry Brigade.	79th Infantry..	Staff, 1st and 2nd Batt.	Hildesheim.
—	Hanover.	82nd " ..	Fus. Batt.	Hameln.
			Staff and 1st Batt.	Göttingen.
			2nd Batt.	Northeim.
			Fus. Batt.	Einbeck.
	40th Infantry Brigade.	77th " ..	Celle.	
Hanover.	—	92nd " ..	Staff, 1st and 2nd Batts.	Brunswick.
	Brunswick.		Fus. Batt.	Blankenburg.
	20th Cavalry Brigade.	16th Dragoons	Staff, 1st, 2nd, 3rd, and 5th sqns.	Lüneburg.
	Hanover.	17th Hussars ..	4th sqn.	Uelzen.
10th Field Artillery Brigade.	10th Field Artillery		Brunswick.	
—			(1st, 2nd, and Horse <i>Abth.</i>).	Hanover.
Hanover.	26th " "		(5th (Brunswick) Bty., Wolfenbüttel).	
			Staff, 2nd and 3rd <i>Abth.</i>	Verden.
			1st <i>Abth.</i>	Oldenburg.
	10th Rifle Battalion		Goelar.	
	10th Pioneer Battalion.. ..		Minden.	
	10th Train Battalion		Hanover.	

11th Army Corps. Headquarters, Cassel.

21st Division.	41st Infantry Brigade.	87th Infantry..	Mainz.
—	Mainz.	88th " ..	"
Frankfurt-on-the-Main.	42nd Infantry Brigade.	80th Fusiliers (4 Batts.).	Staff and 1st Batt.
	Frankfurt.	81st Infantry ..	Wiesbaden.
			2nd and 4th Batts.
			Hanau.
			3rd Batt.
			Homburg.
			Frankfurt-on-the-Main.

21st Division. — Frankfurt-on-the-Main.	21st Cavalry Brigade.	5th Dragoons ..	Hof-Geismar.
	Frankfurt.	13th Hussars ..	Staff, 1st, 2nd, and 5th sqns. Frankfurt.
22nd Division — Cassel.	43rd Infantry Brigade.	83rd Infantry (4 Batts.).	3rd and 4th sqns. Mainz.
	Cassel.	95th Infantry ..	Staff, 1st, 2nd, and 4th Batts. Cassel.
	44th Infantry Brigade.	32nd Infantry ..	3rd Batt. Arolsen.
	Cassel.	94th " ..	Staff and 1st Batt. Gotha.
	22nd Cavalry Brigade.	14th Hussars ..	2nd Batt. Hildburghausen.
	Cassel.	6th Lancers ..	Fus. Batt. Coburg.
	49th Infantry Brigade.	115th Infantry	Staff, 1st and 2nd Batts. Meiningen.
	Darmstadt.	116th "	Fus. Batt. Hersfeld.
	50th Infantry Brigade.	117th "	Staff and 1st Batt. Weimar.
	Darmstadt.	118th "	2nd Batt. Eisenach.
25th (Grand Ducal Hessian) Division. — Darmstadt.	23rd Dragoons		Fus. Batt. Jena.
	25th Cavalry Brigade.		Staff, 1st, 3rd, and 4th sqns. Cassel.
	Darmstadt.		2nd sqn. Rotenburg.
			5th sqn. Wilhelmshöhe.
			Staff, 1st, 2nd, and 5th sqns. Mühlhausen.
11th Field Artillery Brigade. — Cassel.	11th Field Artillery		3rd and 4th sqns. Langensalza.
	27th " " " "		Darmstadt.
	25th " " " "		Giessen.
	11th Rifle Battalion		Mainz.
	11th Pioneer Battalion		Staff and 1st Batt. Mainz.
12th (Royal Saxon) Army Corps. Headquarters, Dresden.	11th Train Battalion		2nd Batt. Worms.
	Grand Ducal Hessian Train Company.		Fus. Batt. Offenbach.
			Staff, 1st and 5th sqns. Darmstadt.
			2nd, 3rd, and 4th sqns. Babenhhausen.
			Staff, 1st, 2nd, and 5th sqns. Darmstadt.
23rd Division. — Dresden.	45th Infantry Brigade.	100th Grenadiers	Darmstadt.
	Dresden.	101st "	Darmstadt.
	46th Infantry Brigade.	102nd Infantry	Butzbach.
	Dresden.	103rd "	Staff, and 1st Horse Abth. Cassel.
			(1st Horse Battery, temp.* at Fulda).
23rd Division. — Dresden.	45th Infantry Brigade.	100th Grenadiers	Darmstadt.
	Dresden.	101st "	Darmstadt.
	46th Infantry Brigade.	102nd Infantry	Butzbach.
	Dresden.	103rd "	Staff, and 1st Horse Abth. Cassel.
			(1st Horse Battery, temp.* at Fulda).

12th (Royal Saxon) Army Corps. Headquarters, Dresden.

23rd Division. — Dresden.	45th Infantry Brigade.	100th Grenadiers	Dresden.
	Dresden.	101st "	"
23rd Division. — Dresden.	46th Infantry Brigade.	102nd Infantry	Zittau.
	Dresden.	103rd "	Bautzen.

* To be moved to Cassel on 30th September, 1886.

23rd Division.	23rd Cavalry Brigade.	Guard Cavalry Regiment.	Dresden.
—	—	17th Lancers ..	Oschatz.
Dresden.	Dresden.	134th Infantry	Leipzig.
	47th Infantry Brigade.	139th "	Staff, 1st and 2nd Batts. Döbeln.
	—		3rd Batt. Leisnig.
	Leipzig.		
24th Division.	48th Infantry Brigade.	106th "	Leipzig.
—	—	107th "	"
Leipzig.	Leipzig.	18th Hussars ..	Grossenhain.
	24th Cavalry Brigade.	19th "	Staff, 1st, 3rd, and 5th sqns. Grimma.
	—		2nd and 4th sqns. Lausigk.
	Leipzig.		
	63rd Infantry Brigade.	104th Infantry	Chemnitz.
	—	133rd "	Zwickau.
	Dresden.	105th "	(Attached to 15th Army Corps).
		106th Sharpshooters.	Dresden.
32nd Division.	64th Infantry Brigade.*	12th Rifle Battalion.	Freiberg.
—	—	13th Rifle Battalion.	Dresden.
Dresden.	Dresden.	15th Rifle Battalion.	Wurzen.
		Carabinier Regiment.	Staff, 1st, 2nd, and 4th sqns. Borna.
	32nd Cavalry Brigade.	18th Lancers ..	3rd and 5th sqns. Pegau.
	—		Staff, 1st, 2nd, and 5th sqns. Rochlitz.
	Dresden.		3rd and 4th sqns. Geithain.
			Staff, 1st and 2nd Abth. Dresden.
12th Artillery Brigade.	12th Field Artillery		Horse Abth. Riesa.
—	23th " " " " " "		Staff, 1st and 3rd Abth. Pirna.
Dresden.			2nd Abth. Freiberg.
	12th Foot Artillery Regiment..		(Attached to 15th Army Corps).
	12th Pioneer Battalion..		Dresden.
	15th Railway Company..		Berlin.
	12th Train Battalion ..		Dresden.

13th (Royal Württemberg) Army Corps. Headquarters, Stuttgart.

	51st Infantry Brigade.	119th Grenadiers.	Stuttgart.
	—	125th Infantry.	Staff, 1st and 2nd Batts. Stuttgart.
	Stuttgart.		Fus. Batt. Tübingen.
26th Division.	52nd Infantry Brigade.	121st Infantry.	Staff, 1st and 2nd Batts. Ludwigsburg.
—	—		Fus. Batt. Gmünd.
Stuttgart.	Ludwigsburg.	122nd "	Staff and 1st Batt. Heilbronn.
			2nd Batt. Mergentheim.
	26th Cavalry Brigade.	25th Dragoons.	Fus. Batt. Ludwigsburg.
	—	19th Lancers ..	Ludwigsburg.
	Stuttgart.		Stuttgart.

* On mobilisation, the 105th would rejoin this brigade, and the three rifle battalions would be distributed, 13th to the 23rd, 15th to the 24th, and 12th to the 32nd Division.

27th Division.	53rd Infantry Brigade.	123rd Grenadiers.	Ulm.
	—	124th Infantry.	Ulm.
	Ulm.		
	54th Infantry Brigade.	120th "	Weingarten.
—	—	126th* "	(Attached to 15th Army Corps).
	Ulm.		
	27th Cavalry Brigade.	26th Dragoons.	Staff, 1st, 2nd, and 3rd sqns. Ulm.
	—		4th and 5th sqns. Wiblingen.
13th Artillery Brigade.	Ulm.	20th Lancers ..	Ludwigsburg.
	13th Field Artillery		(1st, 2nd, and 3rd <i>Abth.</i>). Ulm.
	29th " "		(1st, 2nd, and 3rd <i>Abth.</i>). Ludwigsburg.
	—		
Ludwigsburg.	13th Foot Artillery Battalion ..		Ulm.
	13th Pioneer Battalion ..		Ulm.
	16th Railway Company ..		Berlin.
	13th Train Battalion ..		Ludwigsburg.

14th Army Corps. Headquarters, Karlsruhe.

28th Division.	55th Infantry Brigade.	109th Grenadiers.	Karlsruhe.
	—	110th "	Staff, 1st and Fus. Batts. Mannheim.
	Karlsruhe.		2nd Batt. Heidelberg.
	56th Infantry Brigade.	25th Infantry..	Rastatt.
—	—	111th " ..	Staff, 1st and 2nd Batts. Rastatt.
	Rastatt.		Fus. Batt. Durlach.
	28th Cavalry Brigade.	20th Dragoons.	Staff, 1st, 2nd, 3rd, and 5th sqns. Karlsruhe.
	—		4th sqn. Durlach.
—	Karlsruhe.	22nd "	Staff, 1st, 3rd, and 4th sqns. Mannheim.
			2nd and 5th sqns. Schwetzingen.
	57th Infantry Brigade.	112th Infantry. (4 Batts.)	Staff, 1st, 2nd, and 4th Batts. Colmar.
	—		(4th Batt. temporarily at Rastatt).
39th Division.	Freiburg.	113th Infantry. (4 Batts.)	3rd Batt. Schlettstadt.
			Staff, 1st, 2nd, and 3rd Batts. Freiburg.
	58th Infantry Brigade.	17th Infantry.. (4 Batts.)	4th Batt. Neu-Breisach.
	—		Mühlhausen.
—	Mühlhausen.	114th Infantry. (4 Batts.)	Staff, 1st, 2nd, and 3rd Batts. Konstanz.
			(1 comp. Castle Hohenzollern).
	29th Cavalry Brigade.	14th Dragoons.	4th Batt. Mühlhausen.
	—	21st "	Colmar.
14th Field Artillery.	Freiburg.		Staff, 1st, 2nd, 4th, and 5th sqns. Bruchsal.
	14th Field Artillery		3rd sqn. Rastatt.
	—		Staff, 1st, 2nd, and 3rd <i>Abth.</i> Karlsruhe.
	30th " "		Staff, 1st and 3rd <i>Abth.</i> Rastatt.
—			2nd <i>Abth.</i> Neu-Breisach.
	Karlsruhe.		
	14th Foot Artillery Battalion ..		Staff, 1st, 2nd, and 3rd coys. Rastatt.
			4th company. Neu-Breisach.

* On mobilisation this regiment would rejoin the 54th Brigade.

14th Pioneer Battalion.. .. Kehl.
 14th Train Battalion Karlsruhe (Gottesau).

15th Army Corps. Headquarters, Strassburg.

30th Division. — Metz.	59th Infantry Brigade.	98th Infantry.. Metz.	
	— Metz.	130th " .. "	
	60th Infantry Brigade.	131st " .. Metz.	
	— Metz.	135th " .. Diedenhofen.	
31st Division. — Strassburg.	Bavarian Occupation Brigade.	4th Bavarian Infantry.	Metz.
	— Metz.	8th Bavarian Infantry.	"
	61st Infantry Brigade.	126th Infantry	Strassburg.
	—	132nd " .. "	
33rd Division. — Strassburg.	Strassburg.	138th " .. "	
	62nd Infantry Brigade.	60th Infantry..	Staff, 1st and Fus. Batt. Weissenburg.
	— Hagenau.	137th " ..	2nd Batt. Bitsch.
	65th Infantry Brigade.	67th Infantry..	Staff and 1st Batt. Hagenau.
Cavalry Division of 15th Army Corps. — Metz.	— Metz.	136th " ..	2nd and 3rd Batt. Strassburg.
	66th Infantry Brigade.	67th Infantry..	Metz.
	— Strassburg.	136th " ..	Dieuze.
	30th Cavalry Brigade.	97th Infantry..	Saarburg.
15th Field Artillery Brigade. — Strassburg.	— Metz.	99th " ..	Staff, 1st and 2nd Batts. Strassburg.
	31st Cavalry Brigade.	105th " ..	Fus. Batt. Pfalzburg.
	— Strassburg.	6th Dragoons..	Strassburg.
	15th Field Artillery	8th " ..	Diedenhofen.
15th Field Artillery Brigade. — Strassburg.	31st "	13th " ..	Metz.
	10th Foot Artillery Regiment .	14th Lancers ..	"
	12th " " " ..	15th Dragoons.	St. Avoird (2nd sqn. temporarily at Falkenberg).
	1st Bavarian " Foot Artillery Regiment.	7th Lancers ..	Hagenau.
15th Field Artillery Brigade. — Strassburg.	8th Rifle Battalion	15th " ..	Saarburg.
	15th Pioneer Battalion.. ..	5th Bavarian Light Horse.	Strassburg.
	16th " " " ..	Staff, 1st, 2nd, 4th, and 5th sqns.	Staff, 1st, 2nd, and 3rd Abth. Strassburg.
	15th Train Battalion	3rd sqn. Zweibrücken.	Staff, 1st and 3rd Abth. Hagenau.
15th Field Artillery Brigade. — Strassburg.	10th Foot Artillery Regiment .	Staff, 1st, 2nd, and 3rd Abth. Metz.	
	12th " " " ..		
	1st Bavarian " Foot Artillery Regiment.		
	8th Rifle Battalion		
15th Field Artillery Brigade. — Strassburg.	15th Pioneer Battalion.. ..		
	16th " " " ..		
	15th Train Battalion		

1st Bavarian Army Corps. Headquarters, Munich.

1st Division. — Munich.	1st Infantry Brigade. — Munich.	Body Guard Re- giment.	Munich.
		1st Infantry .. 11th " ..	Staff, 1st and 2nd Batt. Regens- burg.
	2nd Infantry Brigade. — Munich.	2nd " ..	3rd Batt. Stranbing.
		16th " ..	Staff, 1st and 3rd Batt. Munich.
	1st Cavalry Brigade. — Munich.	4th Rifle Batt. .	2nd Batt. Fürstenfeldbruck.
		1st Heavy Cavy.	Staff, 2nd and 3rd Batt. Passau.
	3rd Infantry Brigade. — Augsburg.	2nd " ..	1st Batt. Burghausen.
		3rd Light Horse.	Landshut.
	4th Infantry Brigade. — Ingolstadt.	3rd Infantry ..	Landshut.
		12th " ..	Staff, 1st, 2nd, and 3rd sqns.
2nd Division. — Augsburg.	2nd Cavalry Brigade. — Augsburg.	Freysing.	4th and 5th sqns. Munich.
		3rd Infantry ..	Staff, 1st and 2nd Batts. Augs- burg.
	1st Field Artillery Brigade. — Munich.	3rd Batt. Lndau.	Neu-Ulm.
		1st Rifle Batt. .	Kempten.
	3rd " ..	10th Infantry..	Staff, 2nd and 3rd Batts. Ingol- stadt.
		13th " ..	1st Batt. Landsberg.
	1st Foot Artillery Regiment ..	2nd Light Horse.	Ingolstadt.
		4th " ..	Dillingen.
	1st Pioneer Battalion ..	Staff, 1st, 2nd, 3rd, and 4th sqns. Augsburg.	5th sqn. Neu-Ulm.
		1st, 2nd, and 3rd <i>Abth.</i> .	Munich.
1st Field Artillery Brigade. — Munich.	3rd " ..	1st, 2nd, and Horse <i>Abth.</i> .	Munich.
		Staff and 2nd Batt. Ingolstadt.	1st Batt. Neu-Ulm.
	1st Train Battalion ..	Ingolstadt.	"
		Munich.	Munich.

2nd Bavarian Army Corps. Headquarters, Würzburg.

3rd Division. — Nürnberg.	5th Infantry Brigade. — Bayreuth.	6th Infantry ..	Staff, 1st and 3rd Batts. Am- berg.
		7th " ..	2nd Batt. Sulzbach.
	6th Infantry Brigade. — Nürnberg.	14th " ..	Bayreuth.
		15th " ..	Nürnberg.
	3rd Cavalry Brigade. — Nürnberg.	3rd Rifle Batt..	Neuburg.
		1st Light Horse.	Eichstätt.
	7th Infantry Brigade. — Würzburg.	6th " ..	Nürnberg.
		Staff, 3rd and 5th sqns. Bay- reuth.	1st and 4th sqns. Amberg.
	2nd " ..	2nd sqn. Neumarkt.	Staff, 1st and 2nd Batts. Bam- berg.
		3rd Batt. Erlangen.	Würzburg.
4th Division. — Würzburg.	2nd Rifle Batt.	Aachaffenburg.	"
		"	"

4th Division.	{	8th Infantry	{	17th Infantry..	Germersheim.
		Brigade.		18th " ..	Staff, 1st and 3rd Batt. Landau.
—		Speyer.			2nd Batt. Zweibrücken.
Würzburg.	{	4th Cavalry	{	1st Lancers ..	Bamberg.
		Brigade.		2nd " ..	Ansbach.
—		Bamberg.		5th Light Horse.	(Attached to 15th Army Corps).
2nd Field	{	2nd Field Artillery	{	.. ..	Staff, 1st and Horse <i>Abt.</i> Würzburg.
		Artillery		.. ..	2nd <i>Abt.</i> Landau.
Brigade.		4th " "		.. ..	(1st, 2nd, and 3rd <i>Abt.</i> Augsburg.
—		2nd Foot Artillery Regiment		.. ..	Staff and 1st Batt. (attached to 15th Army Corps).
Würzburg.		2nd Pioneer Battalion		.. ..	2nd Batt. Germersheim.
				.. ..	Speyer (4th and 5th cos. Germersheim).
		2nd Train Battalion		.. ..	Würzburg.

APPENDIX II.
TERRITORIAL DIVISION OF THE EMPIRE.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
I.	1	Tilsit. Wehlau. Bartenstein. Rastenburg. Königsberg.	1. Memel. 2. Heydekrug. 3. Plachken. 4. Tilsit. 1. Labiau. 2. Wehlau. 3. Heinrichswalde. 4. Kaukehmen. 1. Eylau. 2. Bartenstein. 3. Helleberg. 1. Rastenburg. 2. Bischofsburg. 3. Gerdauen. 1. Fischhausen. 2, 3, 4, and 5. Königsberg.	Gumbinnen and Königsberg Districts (Prussia).
	2	Insternburg. Gumbinnen. Lötsen. Goldap.	1. Ragnit. 2 and 3. Insternburg. 4. Darkehmen. 1. Pillkallen. 2. Gumbinnen. 3. Stallupönen. 1. Sensburg. 2. Johannsburg. 3. Lyck. 4. Lötzen. 1. Angerburg. 2. Goldap. 3. Oletzko.	Gumbinnen District (Prussia).
	3	Osterode. Allenstein. Deutsch Eylau. Braunsberg.	1. Osterode. 2. Hohenstein. 3. Sealfeld. 4. Mohrungen. 1. Allenstein. 2. Neidenburg. 3. Willenberg. 4. Ortelaburg. 1. Strassburg. 2. Rosenberg. 3. Neumark. 4. Lautenburg. 1. Braunsberg. 2. Heiligenbeil. 3. Pr. Holland.	Königsberg and Marienwerder Districts (Prussia).
	4	Graudenz. Neustadt. Danzig. Marienburg.	1. Marienwerder. 2. Mewe. 3. Graudenz. 1 and 2. Neustadt. 3. Carthaus. 1, 2, 3, and 4. Danzig. 1 and 2. Elbing. 3. Marienburg. 4. Stuhm.	Marienwerder and Danzig Districts (Prussia).
	5	Anklam. Stralsund. Stargard. Naugard. Stettin.	1. Greifswald. 2. Wolgast. 3. Anklam. 4. Demmin. 5. Ueckermünde. 1. Stralsund. 2. Franburg. 3. Bergen. 4. Grimmen. 1. Stargard. 2. Jakobshegen. 3. Greifenhagen. 4. Pyritz. 1. Cammin. 2. Naugard. 3. Gollnow. 4. Greiffenberg. 5. Labes. 1, 2, 3, and 4. Stettin. 5. Swinemünde.	Stettin and Stralsund Districts (Prussia).
II.				

Territorial Division of the Empire—continued.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
II—contd.	6	Schievelbein. Cöslin. Schlawe. Stolp.	1. Schievelbein. 2. Bärwalde. 3. Neu-Stettin. 4. Dramburg. 1. Cöslin. 2. Colberg. 3. Belgard. 4. Bublitz. 1. Schlawe. 2. Pollnow. 3. Bülow. 4. Rummelsburg. 1 and 2. Stolp. 3. Lauenburg.	Cöslin District (Prussia).
	7	Gnesen. Schneidemühl. Inowraslaw. Bromberg.	1. Gnesen. 2. Witkowo. 3. Mogilno. 4. Wongrowitz. 1. Kolmar. 2. Czarukau. 3. Fillehne. 1. Inowraslaw. 2. Stralno. 3. Schubin. 4. Labischin. 1 and 2. Bromberg. 3. Wirsitz. 4. Nakel.	Bromberg District (Prussia).
	8	Konitz. Deutsch Krone. Thorn. Preussisch Stargardt.	1. Konitz. 2. Tuchel. 3. Schlochau. 4. Baldenburg. 1. Deutsch Krone. 2. Schloppe. 3. Flatow. 4. Zempelburg. 1. Culmsee. 2. Thorn. 3. Culm. 1 and 2. Stargardt. 3. Schwetz. 4. Neuenburg. 5. Berent.	Marienwerder and Danzig Districts (Prussia).
	9	Frankfurt-on-Oder. Cüstrin. Landsberg. Woldenberg.	1 and 2. Frankfurt. 3. Seelow. 4. Müncheberg. 5. Drossen. 6. Reppen. 1. Königsberg in Neumark. 2. Cüstrin. 3. Soldin. 4. Berlinchen. 5. Zielensig. 6. Kriescht. 1 and 2. Landsberg. 1. Arnswalde. 2. Neuwedel. 3. Driesen. 4. Friedeberg.	Frankfurt-on-the-Oder District (Prussia).
III.	10	Grossen. Sorsau. Calau. Cottbus.	1. Grossen. 2. Sommerfeld. 3. Zällichen. 4. Schwiebus. 1. Guben. 2. Fürstenberg. 3. Sora. 4. Forst. 1. Lucken. 2. Finsterwalde. 3. Calau. 4. Senftenberg. 1. Lätßen. 2 and 3. Cottbus. 4. Spremberg.	Frankfurt-on-the-Oder District (Prussia).

Territorial Division of the Empire—continued.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
III—contd.	11	Potsdam. Jüterbog. Brandenburg.	1 and 4. Potsdam. 2. Belzig. 3. Werder. 1. Jüterbog. 2. Dahme. 3. Storkow. 4. Beeskow. 1. Brandenburg. 2. Rathenow. 3. Friesack. 4. Spandau. 5. Cremlen. 6. Nauen.	Potsdam District (Prussia).
		Teltow. (Hdq. Steglitz.) 1st Berlin* 2nd Berlin*	1. Königs-Wusterhausen. 2, 4, and 5. Steglitz. 3. Zossen. } Berlin.	Potsdam District and Berlin (Prussia).
	12	Bernau. Perleberg. Ruppin. Prenzlau.	1. Wriezen. 2. Eberswalde. 3. Alt-Landsberg. 4. Bernau. 5. Liebenwalde. 1. Wittstock. 2. Kyritz. 3. Perleberg. 4. Wittenberge. 1. Neustadt. 2. Ruppin. 3. Lindow. 1 and 2. Prenzlau. 3 and 4. Angermünde. 5. Templin.	Potsdam District (Prussia).
		Stendal. Burg. Halberstadt. Neuhaldensleben. Magdeburg.	1. Stendal. 2. Osterburg. 3. Salzwedel. 1. Burg. 2. Loburg. 3. Genthin. 1. Oschersleben. 2. Halberstadt. 3. Osterwieck. 4. Wernigerode. 1. Gardelegen. 2. Neuhaldensleben. 3. Wolmirstedt. 1, 2, 3, 4, and 6. Magdeburg. 5. Wanzleben.	Magdeburg District (Prussia).
IV.	14	Achersleben. Halle. Bitterfeld. Torgau.	1. Calbe. 2. Gross-Salze. 3. Achtersleben. 4. Quedlinburg. 1. Cönnern. 2, 3, and 6. Halle. 4. Eisleben. 5. Gerbstädt. 1. Delitzsch. 2. Eilenburg. 3. Bitterfeld. 4. Wittenberg. 1. Torgau. 2. Herzberg. 3. Liebenwerda.	Magdeburg and Merseburg Districts (Prussia).
		Dessau. Barnburg.	1. Dessau. 2. Zerbst. 1. Cöthen. 2. Barnburg. 3. Ballenstedt.	Duchy of Anhalt.

* Landwehr Regimental Districts.

Territorial Division of the Empire—*continued*.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
IV— <i>contd.</i>	15	Sangerhausen. Mühlhausen.	1. Mansfeld. 2. Sangerhausen. 3. Rossla. 1. Worbis. 2. Heiligenstadt. 3. Mühlhausen. 4. Langensalza.	Merseburg and Erfurt Districts (Prussia).
		Erfurt. Sondershausen.	1 and 5. Erfurt. 2. Schleusingen. 3. Arnstadt. 4. Ziegenrück. 1. Nordhausen. 2. Bleicherode. 3. Sondershausen. 4. Weissen-see.	Erfurt District (Prussia) and Principality of Schwarzburg-Sondershausen.
		Weissenfels. Naumburg.	1. Schkeuditz 2. Merseburg. 3. Weissenfels. 4. Zeitz. 5. Teuchern. 1. Naumburg. 2. Querfurt. 3. Freyburg. 4. Cölleda.	Merseburg District (Prussia).
	16	Altenburg.	1. Altenburg. 2. Schmölln. 3. Roda.	Duchy of Saxe-Altenburg.
		Gera.	1. Gera. 2. Schleiz. 3. Greiz. 4. Rudolstadt. 5. Königsee. 6. Frankenhäusen.	Principalities of Reuss and Schwarzburg-Rudolstadt.
V.	17	Görlitz. Muskau. Sprottau. Freistadt.	1 and 2. Görlitz. 3. Siegersdorf. 4. Bunzlau. 1. Hoyerwerda. 2. Muskau. 3. Rothenburg. 1. Sagan. 2. Halbau. 3. Sprottau. 4. Lüben. 1. Grünberg. 2. Deutsch-Wartenberg. 3. Neusalz. 4. Freistadt.	Liegnitz and Posen Districts (Prussia).
		Glogau.	1. Klopochen. 2 and 3. Glogau. 4. Fraustadt. 5. Lissa.	
	18	Jauer. Liegnitz. Lauban. Hirschberg.	1. Jauer. 2. Schönnau. 3. Bolkenhain. 1. Parchwitz. 2 and 3. Liegnitz. 4. Haynau. 5. Goldberg. 1. Löwenberg. 2. Greiffenberg. 3. Lauban. 4. Marklissa. 1. Landeshut. 2. Liebau. 3. Schmiedeberg. 4. Hirschberg.	Liegnitz District (Prussia).

Territorial Division of the Empire—continued.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
V—contd.		Posen. Samter. Neutomischel. Kosten.	1. Rogasen. 2. Obornik. 3, 4, and 5. Posen. 1. Sauter. 2. Pinne. 3. Birnbaum. 4. Schwerin. 1. Meseritz. 2. Bentschen. 3. Neustadt. 4. Grätz. 1. Kosten. 2. Schmiegel. 3. Wollstein. 4. Unruhstadt.	Posen District (Prussia).
	20	Schroda. Schrimm. Rawitsch. Ostrowo.	1. Kostschin. 2. Schroda. 3. Wreschen. 1. Pleschen. 2. Jarotschin. 3. Schrimm. 4. Dolzig. 1. Bojanowo. 2. Rawitsch. 3. Kobylin. 4. Krotoschin. 1. Ostrowo. 2. Adelnau. 3. Schildberg. 4. Kempen.	Posen District (Prussia).
	21	Striegau. Wohlau. 2nd Breslau. Oals. 1st Breslau.*	1. Striegau. 2. Charlottenbrunn. 3 and 4. Waldenburg. 1. Wohlau. 2. Guhrau. 3. Steinau. 1 and 2. Breslau. 3. Trebnitz. 4. Neumarkt. 1. Oals. 2. Bernstadt. 3. Wartenberg. 4. Mülltich. 5. Trachenberg. 1 to 8. Breslau.	Breslau District (Prussia).
	22	Glatz. Schweidnitz. Münsterberg. Brieg.	1. Glatz. 2. Reinerz. 3. Habelschwerdt. 4. Landeck. 5. Neurode. 1. Schweidnitz. 2. Zobten. 3. Reichenbach. 4. Langenbielau. 1. Münsterberg. 2. Frankenstein. 3. Camenz. 4. Strehlen. 5. Nimptsch. 1. Brieg. 2. Ohlau. 3. Namslau.	Breslau District (Prussia).
	23	Rybnik. Ratibor. Gleiwitz. Kosel.	1. Pleisz. 2. Nicolai. 3. Rybnik. 4. Sohrau. 1 and 2. Ratibor. 3. Hultschin. 3. Leobschütz. 5. Katscher. 1. Gleiwitz. 2. Tost. 3. Gr. Strehlitz. 4. Leschnitz. 5. Zabrze. 1. Kosel. 2. Gnadenfeld. 3. Neustadt. 4. Ober-Glogau.	Oppeln District (Prussia).

* Landwehr Regimental District.

VI.

Territorial Division of the Empire—*continued*.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
VI— <i>contd.</i>	24	Neisse. Beuthen. Kreuzburg. Oppeln.	1. Neisse. 2. Petschkau. 3. Grottkau. 1 and 3. Beuthen. 2. Tarnowitz. 4 and 5. Kattowitz. 1. Rosenberg. 2. Lublinitz. 3. Kreuzburg. 1. Oppeln. 2. Carlsruhe. 3. Falkenberg.	Oppeln District (Prussia).
		1st Münster. 2nd Münster. Weesl. Recklinghausen.	1 and 2. Münster. 3. Burgsteinfurt. 4. Coesfeld. 1. Warendorf. 2. Beckum. 3. Lüdingshausen. 4. Tecklenburg. 5. Ibbenbüren. 1. Weesl. 2. Enmerich. 3. Duisburg. 4. Oberhausen. 5. Mülheim. 6. Ruhrort. 1. Dorsten. 2. Recklinghausen. 3. Borken. 4. Ahaus.	Münster and Düsseldorf Districts (Prussia).
VII.	26	Minden. Bielefeld.	1 and 2. Minden. 3. Lübbecke. 4. Rahden. 1 and 2. Bielefeld. 3. Halle. 4. Wiedenbrück. 5. Bünde. 6. Herford.	Minden District (Prussia).
		Detmold.	1. Detmold. 2. Lage. 3. Lemgo. 4. Bückeburg.	Principalities of Lippe-Detmold and Schaumburg-Lippe.
	27	Paderborn.	1. Paderborn. 2. Warburg. 3. Hörter. 4. Brakel.	Minden District (Prussia).
		Soest. Dortmund. Bochum. Hagen.	1. Soest. 2. Werl. 3. Lippstadt. 4. Büren. 5. Unna. 6. Hamm. 1 to 4. Dortmund. 2. Wattenscheid. 3. Witten. 4. Hattingen. 5. Gelsenkirchen. 1, 2, and 3. Hagen. 4. Iserlohn.	Arnsberg District (Prussia).

Territorial Division of the Empire—*continued.*

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
VII— <i>cont.</i>	28	Geldern. Düsseldorf. Essen. Gräfrath. Barmen.	1. Cleve. 2. Xanten. 3. Moers. 4. Geldern. 1, 2, and 3. Düsseldorf. 4, 5, and 6. Crefeld. 1 and 4. Essen. 2. Borbeck. 3. Werden. 5. Stoppenberg. 1. Solingen. 2. Opladen. 3. Lennep. 4. Hückeswagen. 1 and 2. Elberfeld. 3 and 4. Barmen. 5. Mettmann.	Düsseldorf District (Prussia).
		Aix-la-Chapelle. Eupen. Erkelenz. Jülich.	1, 2, 3, and 4. Aix-la-Chapelle. 5. Eschweiler. 1. Eupen. 2. Montjoie. 3. Schleiden. 4. Malmedy. 1. Erkelenz. 2. Heinsberg. 3. Kempen. 4. Dülken. 1 and 2. Düren. 3. Geilenkirchen. 4. Jülich.	Aix-la-Chapelle and Düsseldorf Districts (Prussia).
	30.	Siegburg. Bonn. Neuss. Deutz. Köln.*	1. Siegburg. 2. Hennef. 3. Waldbroel. 1 and 2. Bonn. 3. Bergheim. 4. Euskirchen. 5. Rheinbach. 1. Neuss. 2. Grevenbroich. 3. Markt Gladbach. 4. Rheydt. 5. Viersen. 1. Mülheim. 2. Bensberg. 3. Wipperfürth. 4. Gummersbach. 1 to 8. Köln (Cologne).	Cologne and Düsseldorf Districts (Prussia).
VIII.	31.	Neuwied. Coblenz. Kirn. Andernach.	1. Lütz. 2. Neuwied. 3. Altenkirchen. 1 and 2. Coblenz. 3. St. Goar. 4. Sigmaringen. 5. Hechingen. 1. Simmern. 2. Zell. 3. Kreuznach. 4. Sobernheim. 1. Mayen. 2. Cochem. 3. Adenau. 4. Andernach. 5. Ahrweiler.	Coblenz and Sigmaringen (Hohenzollern) Districts (Prussia).
		St. Wendel. Saarlouis.	1. Birkenfeld. 2. St. Wendel. 3. Ottweiler. 1. Saarbrücken. 2. St. Johann. 3. Saarlouis. 4. Saarwellingen. 5. Merzig.	Trier District (Prussia), and Principality of Birkenfeld (Oldenburg).
	32.	1st Trier. 2nd Trier.	1 and 3. Trier (Trevs). 2. Hermeskeil. 4. Saarburg. 5. Bernkastel. 1. Bitburg. 2. Prüm. 3. Daun. 4. Wittlich.	

* Landwehr Regimental District.

Territorial Division of the Empire—*continued.*

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
IX.	33.	Bremen.	1 and 2. Bremen. 3. Bremerhaven. 4. Lehe. 5. Osterholz. 6. Verden.	Free Town of Bremen. Stade District (Prussia).
		Stade.	1 and 2. Stade. 3. Ottendorf. 4. Rotenburg.	Stade District (Prussia).
		Hamburg.	1 to 6. Hamburg.	Free Town of Hamburg.
		Lübeck.	1 and 2. Lübeck. 3. Ratzeburg.	Free Town of Lübeck. Duchy of Lauenburg.
	34.	Schwerin.	1. Schwerin. 2. Hagenow. 3. Ludwigslust. 4. Parchim.	Grand Duchy of Mecklenburg-Schwerin.
		Neu-Strelitz.	1. Neu-Strelitz. 2. Neu-Brandenburg. 3. Schönberg.	Grand Duchy of Mecklenburg-Strelitz.
		Wismar. Rostock.	1. Wismar. 2. Grevesmühlen. 3. Doberan. 1. Rostock. 2. Ribnitz. 3. Güstrow. 4. Malchin. 5. Waren.	Grand Duchy of Mecklenburg-Schwerin.
	35.	Schleswig.	1. Flensburg. 2. Sörup. 3. Eckernförde. 4. Schleswig. 5. Kappeln. 6. Husum.	Province of Schleswig-Holstein (Prussia).
		Apenrade.	1. Hadersleben. 2. Sonderburg. 3. Apenrade. 4. Tondern.	
	36.	Kiel.	1 and 6. Kiel. 2. Neumünster. 3. Preetz. 4. Oldenburg. 5. Eutin.	Province of Schleswig-Holstein (Prussia), and Principality of Lübeck (Oldenburg).
		Rendsburg. Altona.	1. Rendsburg. 2. Heide. 3. Meldorf. 4. Wilster. 5. Itzehoe. 1. Altona. 2. Pinneberg. 3. Elmshorn. 4. Oldesloe. 5. Wandsbeck. 6. Segeberg.	

Territorial Division of the Empire—continued.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
X.	37.	Aurich. Lingen.	1. Aurich. 2. Wittmund. 3. Norden. 4. Fjnden. 5. Leer. 6. Weener. 1. Papenburg. 2. Meppen. 3. Lingen. 4. Bersenbrück.	Aurich and Osnabrück Districts (Prussia).
		1st Oldenburg. 2nd Oldenburg.	1. Varel. 2. Brake. 3. Delmenhorst. 4. Wilhelmshaven. 1. Oldenburg. 2. Cloppenburg. 3. Vechta.	Grand Duchy of Oldenburg.
	38.	Osnabrück. Nienburg. Hanover.	1 and 4. Osnabrück. 2. Melle. 3. Syke. 1. Hoya. 2. Nienburg. 4. Rinteln. 1 and 2. Hanover. 3. Neustadt. 4. Springe. 5. Hameln.	Osnabrück, Hanover, and Cassel Districts (Prussia).
	39.	Hildesheim. Göttingen.	1 and 2. Hildesheim. 3. Goslar. 4. Zellerfeld. 5. Peine. 1. Göttingen. 2. Northeim. 3. Münden. 4. Osterode. 5. Duderstadt.	Hildesheim District (Prussia).
	40.	Lüneburg. Celle.	1. Harburg. 2. Bleckede. 3. Lüneburg. 4. Dannenberg. 1. Celle. 2. Burgdorf. 3. Gifhorn. 4. Uelzen. 5. Fallingb. ostel.	Lüneburg District (Prussia).
XI.	41.	1st Brunswick. 2nd Brunswick.	1, 2, and 5. Brunswick. 3. Helmstedt. 4. Blankenburg. 1 and 2. Wolfenbüttel. 3. Gandersheim. 4. Holzminden.	Duchy of Brunswick.
		Oberlahnstein. Wiesbaden. Wetzlar. Weilburg.	1. Langen-Schwalbach. 2. Nassau. 3. St. Goarshausen. 4. Montabaur. 1. Wiesbaden. 2. Höchst. 3. Rüdelsheim. 1. Wetzlar. 2. Dillenburg. 3. Biedenkopf. 1. Weilburg. 2. Westerburg. 3. Limburg.	Wiesbaden and Coblenz Districts (Prussia).

Territorial Division of the Empire—*continued*.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
XI— <i>cont.</i>	42.	Marburg.	1. Marburg. 2. Kirchhain. 3. Ziegenhain. 4. Homberg.	Cassel, Wiesbaden, and Arnsberg Districts (Prussia).
		Fulda.	1. Fulda. 2. Gelnhausen. 3. Schlüchtern. 4. Gersfeld.	
		Meschede.	1. Brilon. 2. Meschede. 3. Arnsberg. 4. Berleburg.	
	43.	Siegen.	1. Siegen. 2. Olpe. 3. Altmün.	Principality of Waldeck and Cassel District (Prussia).
		Frankfurt.	1, 2, 3, and 4. Frankfurt. 5. Homburg. 6. Hanau.	
		Arolsen.	1. Arolsen. 2. Corbach. 3. Wolfhagen. 4. Frankenberg.	
	44.	1st Cassel.	1 and 2. Cassel. 3. Witzgenhausen. 4. Hofgeismar.	Duchy of Saxe-Coburg- Gotha.
		Gotha.	1. Gotha. 2. Ohrdruf. 3. Waltershausen. 4. Coburg.	
		Meiningen.	1. Meiningen. 2. Hilburghausen. 3. Sonneberg. 4. Saalfeld.	
	44.	Hersfeld.	1. Rotenburg. 2. Schmalkalden. 3. Hünfeld. 4. Hersfeld.	Cassel District (Prussia).
		2nd Cassel.	1. Melsungen. 2. Eschwege. 3. Fritzlar.	
		Weimar.	1. Weimar. 2. Berka. 3. Apolda. 4. Jena. 5. Neustadt.	
25th Division (Grand Ducal Hessian).	49.	Eisenach.	1. Eisenach. 2. Dornbach.	Grand Duchy of Saxe- Weimar-Eisenach.
		1st Darnstadt.	1 and 2. Darnstadt. 3 and 4. Offenbach.	
		Friedberg.	1 and 3. Friedberg. 2. Büdingen.	
	50.	Giessen.	1. Giessen. 2. Lich. 3. Alsfeld. 4. Lauterbach. 5. Schotten.	Grand Duchy of Hesse.
		2nd Darnstadt.	1. Dieburg. 2. Rheinheim. 3. Bensheim. 4. Gross-Gerau.	
		Erbach.	1. Höchst. 2. Erbach. 3. Wald-Michelbach. 4. Heppenheim.	Grand Duchy of Hesse.
		Mainz.	1 and 2. Mainz. 3. Bingen.	
		Worms.	1. Worms. 2. Osthofen. 3. Oppenheim. 4. Alzey.	

Territorial Division of the Empire—continued.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
XII.	46.	Pirna.	1. Stolpen. 2. Schandau. 3. Pirna. 4. Dippoldiswalde.	Kingdom of Saxony.
		Zittau.	1 and 2. Zittau. 3. Herrnhut. 4. Löbau. 5. Neusalza.	
	47.	Bautzen.	1 and 5. Bautzen. 2. Bischofswerda. 3. Kanenz. 4. Pulsnitz.	
		2nd Dresden.	1 and 2. Grossenhain. 3 and 4. Dresden.	
	48.	Plauen.	1. Oelsnitz. 2. Reichenbach. 3 and 4. Plauen.	
XIII.	63.	Schneeberg.	1. Schwarzenberg. 2. Schneeberg. 3. Auerbach. 4. Falkenstein.	Kingdom of Württemberg.
		Zwickau.	1. Crimmitschau. 2 and 3. Zwickau. 4. Kirchberg. 5. Werdau.	
	64.	Glauchau.	1. Lichtenstein. 2. Meerane. 3. Glauchau. 4. Hohenstein.	
		1st Leipzig.	1 to 5. Leipzig.	
	65.	2nd Leipzig.	1 to 4. Leipzig.	
XIII.	66.	Borna.	1. Penig. 2. Rochlitz. 3 and 4. Borna.	Kingdom of Württemberg.
		Wurzen.	1. Grimma. 2. Wurzen. 3. Oschatz.	
	67.	Freiberg.	1 and 3. Freiberg. 2. Brand.	
		Annaberg.	1. Marienberg. 2 and 3. Annaberg. 4. Lengefeld.	
	68.	Chemnitz.	1 to 5. Chemnitz. 6. Limbach. 7. Stollberg.	
XIII.	69.	Frankenberg.	1. Frankenberg. 2. Zschopau.	Kingdom of Württemberg.
		Döbeln.	1. Rosewein. 2 and 3. Döbeln.	
	70.	Meissen.	1. Meissen. 2. Nossen. 3. Löbtau. 4. Plauen. 5. Tharandt.	
		1st Dresden.	1 to 7. Dresden.	
	71.	Calw.	1. Herrenberg. 2. Calw. 3. Neuenburg. 4. Nagold.	
XIII.	72.	Reutlingen.	1. Reutlingen. 2. Tübingen. 3. Rottenburg.	Kingdom of Württemberg.
		Horb.	1. Horb. 2. Freudenstadt. 3. Sulz. 4. Oberndorf.	
	73.	Rotweil.	1. Balingen. 2. Rottweil. 3. Spaichingen. 4. Tuttlingen.	
		Stuttgart.	1 to 4. Stuttgart.	
	74.	Stuttgart.	1 to 4. Stuttgart.	

Territorial Division of the Empire—*continued*.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
XIII— <i>cont.</i>	52.	Leonberg. Ludwigsburg. Heilbronn. Hall.	1. Böblingen. 2. Leonberg. 3. Vaihingen. 4. Maulbronn. 1. Ludwigsburg. 2. Canstatt. 3. Marbach. 4. Weiblingen. 1. Brackenheim. 2. Besigheim. 3. Heilbronn. 4. Neckarsulm. 1. Backnang. 2. Weinsberg. 3. Oehringen. 4. Hall.	Kingdom of Württemberg.
		Mergentheim. Ellwangen. Gmünd. Ulm.	1. Künzelsau. 2. Blausteden. 3. Crailsheim. 4. Mergentheim. 1. Gaildorf. 2. Ellwangen. 3. Aalen. 4. Meresheim. 1. Schorndorf. 2. Weizheim. 3. Göppingen. 4. Gmünd. 1. Geislingen. 2. Heidenheim. 3. Ulm.	
	53.	Ravensburg. Biberach. Ehingen. Esslingen.	1. Riedlingen. 2. Saulgau. 3. Ravensburg. 4. Tettnang. 1. Biberach. 2. Waldsee. 3. Leutkirch. 4. Wangen. 1. Blaubeuren. 2. Münsingen. 3. Ehingen. 4. Laupheim. 1. Kirchheim. 2. Nürtingen. 3. Esslingen. 4. Urach.	
	54.	Mosbach. Heidelberg.	1. Tauberbischofsheim. 2. Buchen. 3. Adelsheim. 4. Mosbach. 1 and 2. Heidelberg. 3. Mannheim. 4. Weinheim.	
XIV.	55.	Bruchsal. Karlsruhe.	1. Sinsheim. 2. Bretten. 3. Schwetzingen. 4. Bruchsal. 1, 3, and 4. Karlsruhe. 2. Pforzheim.	Grand Duchy of Baden.
	56.	Rastatt. Offenburg. Freiburg. Lörrach.	1. Rastatt. 2. Baden. 3. Bühl. 4. Achern. 1. Offenburg. 2. Kehl. 3. Wolfach. 4. Lehr. 1. Waldkirch. 2. Alt-Breisach. 3 and 4. Freiburg. 1. Staufen. 2. Müllheim. 3. Lörrach. 4. Schopfheim.	
	57.	Donauessingen. Stockach.	1. Villingen. 2. Donauessingen. 3. Bonndorf. 4. Waldshut. 1. Engen. 2. Stockach. 3. Ueberlingen. 4. Konstanz.	
	58.			

Territorial Division of the Empire—*continued.*

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	Districts.
XV.			1 and 2. Diedenhofen. 3. Metzervisse. 4. Bolchen. 5. Falkenberg.	Imperial Territory of Alsace and Lorraine.
	59.	Diedenhofen. Saarburg. Metz.	1. Chateau-Salins. 2. Dieuze. 3. Saarburg. 4. Pfalzburg. 1, 2, and 3. Metz. 4. Ars.	
	60.	Saargemünd. Hagenau.	1. Korbach. 2. Püttlingen. 3. Saargemünd. 4. Bitech. 1. Weissenburg. 2. Selz. 3. Hegenau. 4. Bischweiler. 5. Saarunion. 6. Buchsweiler. 7. Zabern.	
	61.	Molsheim. Schlettstadt. Strassburg.	1. Molsheim. 2. Schirneck. 3. Ober-Ehnheim. 4. Erstein. 1. Barr. 2. Schlettstadt. 3. Rappoltsweller. 4. Kayersberg. 1, 2, and 3. Strassburg. 4. Brunnath.	
	62.	Colmar. Altkirch. Mülhausen.	1. Münster. 2. Colmar. 3. Rufach. 4. Gebweiler. 1. Thann. 2. Masmünster. 3. Altkirch. 4. Pfirt. 1, 2, and 3. Mülhausen. 4. Hüningen.	
I. Royal Bavarian.	1.	Weilheim. 1st Munich. Rosenheim. Wasserburg.	Miesbach, Tölz, Weilheim, Schöngau. Munich. Reichenhall, Laufen, Traunstein, Rosenheim. Mühldorf, Erding, Wasserburg, Ebersberg.	Kingdom of Bavaria.
	2.	2nd Munich. Landshut. Vilshofen. Passau.	Bruck, Munich, Friedberg, Landberg. Landshut, Freising, Rottenburg, Dingolfing. Vilshofen, Landau, Pfarrkirchen, Griesbach. Passau, Waldkirchen, Schönberg, Deggendorf.	

Territorial Division of the Empire—*continued*.

Army Corps.	Infantry Brigade.	Landwehr Battalion District.	Stations of Companies.	District.
I. Royal Bavarian— <i>cont.</i>	3.	Kempten. Mindelheim. Augsburg. Dillingen.	Kempten, Nesselwang, Immenstadt, Lindau. Mindelheim, Memmingen, Kaufbeuren, Oberdorf. Neu-Ulm, Krummbach, Augsburg. Dillingen, Donauwörth, Nördlingen, Günzburg.	Kingdom of Bavaria.
	4.	Ingolstadt. Gunzenhausen. Ratisbon. Straubing.	Ingolstadt, Eichstätt, Pfaffenhofen, Aichach, Beilngries. Dinkelsbühl, Gunzenhausen, Weissenburg, Schwabach. Ratisbon, Stadthof, Kelheim, Parsberg. Cham, Viechtach, Straubing.	
	5.	Amberg. Neustadt. Hof. Bayreuth.	Amberg, Schwandorf, Neumburg, Roding. Neustadt, Volkenstrass, Tirschenreuth, Eschenbuch. Hof, Naila, Münchberg, Wunsiedel. Kronach, Kulmbach, Bayreuth, Pegnitz.	
	6.	Nürnberg. Ansbach. Erlangen. Kitzingen.	Nürnberg, Neumarkt. Ansbach, Fürth, Neustadt, Offenheim. Sulzbach, Hersbruck, Erlangen, Hochstadt. Kitzingen, Scheinfeld, Volkach, Hassfurt.	
II. Royal Bavarian.	7.	Bamberg. Kiesingen. Würzburg. Aschaffenburg.	Bamberg, Staffelstein, Ebermannstadt, Ebern. Kiesingen, Brückenau, Neustadt, Königshofen. Schweinfurt, Würzburg, Karlstadt. Aschaffenburg, Miltenberg, Marktheidenfeld, Lohr.	
	8.	Kaiserslautern. Speyer. Landau. Zweibrücken.	Kaiserslautern, Kusel, Rockenhausen, Kirchheimbolanden. Speyer, Neustadt, Dürkheim, Frankenthal. Landau, Annweiler, Bergzabern, Langenkandel. Zweibrücken, Blieskastel, Homburg, Pirmasens.	

APPENDIX III. PEACE STRENGTH OF THE GERMAN ARMY (Budget for 1887-88).

Regiments and other Formations.	Officers.	N.-C. Officers and Rank and File.								Medical Officers.				Military Officials.				Government Horses.
		N.-C. Officers.	Aspirant Pay-masters.	N.-C. Officers.	Rank and File.	Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.	Total.	Medical Officers.				Paymasters.	Veterinary Surgeons.	Armourers.	Saddlers.	
<i>Infantry.</i>																		
Prussia :—127 regiments, 1 instructional battalion, 6 under-officers' schools, 1 musketry school ..	8,087	24,890	405	1,863	10,332	198,786	1,606	5,158	242,540	803	404	..	405	..	..	..	..	..
Saxony :—12 regiments, 1 under-officers' school ..	719	2,172	37	164	966	37,150	146	456	21,090	73	37	..	37	..	..	..	..	..
Württemberg :—8 regiments ..	476	1,423	24	104	640	11,005	96	300	13,592	48	24	..	24	..	..	..	..	..
Bavaria :—19 regiments and 1 musketry school ..	1,129	3,444	57	247	1,520	29,069	228	708	35,273	114	58	..	57	..	..	..	..	..
Total infantry ..	10,361	31,428	523	2,378	13,458	276,010	2,076	6,622	312,495	1,038	523	..	523	..	..	..	..	..
<i>Rifles.</i>																		
Prussia :—14 battalions ..	308	812	14	182	..	6,608	56	168	7,840	28	14	..	14	..	..	..	..	..
Saxony :—3 battalions ..	66	174	3	39	..	1,380	12	36	1,644	6	3	..	3	..	..	..	..	..
Bavaria :—4 battalions ..	72	232	4	52	..	1,980	16	48	2,332	8	4	..	4	..	..	..	..	..
Total rifles ..	446	1,218	21	273	..	9,968	84	252	11,816	42	21	..	21	..	..	..	..	..

Peace Strength of the German Army—continued.

Regiments and other Formations.	N.-C. Officers and Rank and File.										Military Officials.				Government Horses.
	Officers.	N.-C. Officers.	Aspirant Pay- masters.	Bandmen, Drummers, and Buglers.		Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.	Total.	Medical Officers.	Paymasters.	Veterinary Surgeons.	Armourers.	Saddlers.	
				N.-C. Officers.	Rank and File.										
<i>Landwehr Districts.</i>															
Prussia:—209 districts	226	1,955	3	..	..	1,782	..	..	3,740	4	2	..	..	..	..
Saxony:—19 districts	23	170	1	..	..	116	..	..	287	..	..	..	..	..	..
Württemberg:—17 districts	18	151	..	..	..	140	..	..	291	..	..	..	..	..	..
Bavaria:—32 districts	49	307	..	..	..	237	..	..	544	..	..	..	..	..	..
Total Landwehr districts	316	2,583	4	..	..	2,275	..	..	4,862	4	2	..	..	..	..
Total infantry, rifles, and Land- wehr districts	11,123	35,229	548	2,651	13,458	268,253	2,160	6,874	329,173	1,084	546	..	544	..	..
<i>Cavalry.</i>															
Prussia:—73 regiments and 1 riding establishment	1,851	5,634	76	1,174	..	41,954	365	1,470	50,673	189	76	371	73	78	49,047
Saxony:—6 regiments and 1 riding esta- blishment	151	463	6	96	..	3,468	30	120	4,183	15	6	30	6	6	4,034
Württemberg:—4 regiments	100	308	4	64	..	2,236	20	80	2,712	9	4	20	4	4	2,612
Bavaria:—10 regiments and 1 riding esta- blishment	256	792	11	160	..	5,804	50	205	7,022	31	11	28	10	10	6,778
Total cavalry	2,358	7,197	97	1,494	..	53,462	465	1,875	64,590	244	97	449	93	93	62,469

Regiments and other Formations.	N.-C. Officers and Rank and File.										Medical Officers.				Military Officials.				Government Horses.
	Officers.	N.-C. Officers.	Aspirant Pay-masters.	Bandmen, Drummers, and Buglers.		Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.	Total.	Medical Officers.	Paymasters.	Veterinary Surgeons.	Armourers.	Saddlers.					
				N.-C. Officers.	Rank and File.														
<i>Field Artillery.</i>																			
Prussia :—29 regiments and 1 instructional battery..	1,511	4,851	86	648	..	22,955	284	853	29,877	144	86	113	86	..	..	14,368	
Saxony :—2 regiments ..	118	392	6	49	..	1,850	23	69	2,389	11	6	8	6	..	..	1,138	
Württemberg :—2 regiments ..	98	314	6	44	..	1,506	18	54	1,942	10	6	6	6	..	..	888	
Bavaria :—4 regiments ..	212	682	12	84	..	3,152	40	120	4,090	20	12	12	12	..	..	1,840	
Total field artillery ..	1,939	6,239	110	825	..	29,463	365	1,096	38,098	185	110	189	110	..	..	18,232	
<i>Foot Artillery.</i>																			
Prussia :—11 regiments and 2 battalions, staff and instructional company of school of gunnery, and experimental company ..	575	2,376	25	169	196	10,091	98	327	13,282	26	25	..	25	..	..	16	
Saxony :—1 regiment ..	44	205	2	13	16	968	8	32	1,244	2	2	..	2	..	..	..
Württemberg :—1 battalion ..	21	91	1	13	8	333	4	12	462	1	1	..	1	..	..	..
Bavaria :—2 regiments ..	90	368	4	26	32	1,744	16	48	2,238	4	4	..	4	..	..	..
Total foot artillery ..	790	2,040	32	221	252	13,136	126	419	17,226	33	32	..	32	..	..	16	
Total field and foot artillery ..	2,669	9,279	142	1,046	252	42,599	491	1,515	55,324	218	142	139	142	..	..	18,248	

Peace Strength of the German Army—continued.

Regiments and other Formations.	Officers.	N.-C. Officers and Rank and File.										Medical Officers.	Military Officials.				Government Horses.
		N.-C. Officers.	Aspirant Pay-masters.	N.-C. Officers.		Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.	Total.	Paymasters.	Veterinary Surgeons.		Armourers.	Saddlers.			
				Rank and File.	Bandmen, Drummers, and Buglers.												
<i>Engineers.</i>																	
Prussia:—15 pioneer battalions, 1 telegraph company, 14 railway companies (31 battalions and staff), 1 balloon section, and supernumerary officers ..	444	1,311	22	208	28	7,654	76	225	9,524	38	20	..	19	..	..	..
Saxony:—1 pioneer battalion, 1 railway company ..	23	86	1	13	2	507	5	15	629	2	1	..	1	..	..	..
Württemberg:—1 pioneer battalion, 1 railway company ..	26	82	1	13	2	492	5	15	600	2	1	..	1	..	..	..
Bavaria:—2 pioneer battalions, 1 railway battalion of 2 companies ..	65	219	3	34	4	1,222	12	38	1,532	5	3	..	3	..	..	..
Total engineers ..	558	1,698	27	268	36	9,865	98	293	12,285	47	25	..	24	..	..	..

Peace Strength of the German Army—continued.

	Officers.	N.-C. Officers and Rank and File.							Medical Officers.	Military Officials.				Government Horses.
		N.-C. Officers.	Aspirant Paymasters.	N.-C. Officers.	Rank and File.	Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.		Paymasters.	Veterinary Surgeons.	Armourers.	Saddlers.	
<i>Train.</i>														
Prussia:—14 battalions and 1 company ..	200	973	17	43	..	3,225	43	215	4,516	15	15	..	..	2,723
Saxony:—1 battalion ..	14	67	2	3	..	225	8	15	315	1	1	..	..	191
Württemberg:—1 battalion ..	14	67	1	3	..	207	8	15	293	1	1	..	..	190
Bavaria:—2 battalions ..	28	140	2	8	..	364	434	36	984	2	2	..	..	256
Total train ..	256	1,247	22	57	..	4,021	473	281	6,111	19	19	..	..	3,360
<i>Special Formations.</i>														
(Guard Companies, Demi-Invalids, Courier Corps, <i>personnel</i> of military schools, disciplinary companies, military prisons).														
Prussia ..	277	500	11	..	8	90	3	12	624	11	10	..	..	..
Saxony ..	10	26	..	..	..	..	..	..	26	..	..	..	..	..
Württemberg ..	1	43	..	..	..	..	..	..	43	..	..	..	..	..
Bavaria ..	38	163	..	..	..	..	..	..	163	..	1	..	..	..
Total special formations ..	326	787	11	..	8	90	3	12	861	11	11	..	..	..

Peace Strength of the German Army—continued.

Regiments and other Formations.	N.-C. Officers and Rank and File.										Military Officials.				Government Horses.
	Officers.	N.-C. Officers.	Aspirant Paymasters.	N.-C. Officers.		Lance-Corporals and Rank and File.	Hospital Assistants.	Regimental Tradesmen.	Total.	Medical Officers.	Paymasters.	Veterinary Surgeon.	Armourers.	Saddlers.	
				Rank and File.	Bandmen, Drummers, and Buglers.										
<i>Unattached Officers, &c.</i>															
(War Ministry, Staff, Engineer Staff, Train Depôts, Remount Service, Military Establishments).															
Prussia	1,555	48	..	..	..	..	4	..	52	105	..	14	..	..	..
Saxony	80	3	..	..	..	..	..	..	3	7	..	1	..	..	..
Württemberg	52	3	..	..	..	..	..	..	3	5	..	1	..	..	..
Bavaria	285	6	1	..	..	..	..	..	7	19	..	7	..	..	..
Total unattached officers, &c. ..	1,972	60	1	..	..	..	4	..	65	136	..	23	..	..	..
<i>Totals.</i>															
Prussia	14,984	42,860	659	4,287	10,564	293,145	2,535	8,428	362,468	1,375	653	523	622	73	66,152
Saxony	1,248	3,757	58	377	984	25,664	227	743	31,310	118	56	40	55	6	5,361
Württemberg	806	2,487	87	241	650	15,909	146	476	19,946	76	87	28	36	4	3,680
Bavaria	2,224	6,363	94	611	1,556	43,572	796	1,203	54,185	208	94	50	90	10	8,874
Grand total	19,262	55,447	848	5,516	13,754	378,290	8,704	10,850	468,409	1,777	840	641	203	93	84,077

N.B.—To the above figures of men must be added the one-year volunteers, about 8,400 in all (infantry 5,400, cavalry 1,200, field artillery 720, foot artillery 360, pioneers 280, train 110, and non-combatant services (medical and veterinary) 400), and 4,157 employes in the various departments. To those of horses should be added 17,241 officers', 1,200 one-year volunteers, and 3,161 Krumper horses, bringing the total up to 103,670.

APPENDIX IV.
WAR STRENGTH OF THE GERMAN ARMY.

Units.	Officers.	Medical Officers.	Officials.	N.O. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Infantry and Rifles.</i>								
151 Regiments of infantry of 3 batts. ¹ ..	10,268	906	906	469,499	22,046	..	6,644	
15 Regiments of infantry of 4 batts. ..	1,350	120	120	62,055	2,850	..	870	
88 4th battalions of infantry ..	1,826	166	166	85,490	3,652	..	1,162	
21 Battalions of rifles ..	462	42	42	21,630	924	..	294	
74 Staffs of field reserve regiments ² ..	148	..	..	518	888	..	148	¹ Including extra bandmen in the Guards.
305 Field reserve battalions ..	6,710	610	610	253,150	13,420	..	3,355	² 8 of the Guards, 4 each of 1st to 14th and 1st and 2nd Bavarian Corps, 2 of 25th Division.
10 Reserve rifle battalions ³ ..	220	20	20	8,900	440	..	140	
74 Staffs of Landwehr regiments ³ ..	148	..	..	518	888	..	148	³ 98 of the line of 5 companies, 9 of the guard, and 59 of the line of 4 companies.
305 Landwehr battalions ..	6,710	610	610	253,150	13,420	..	3,355	
160 Depot battalions of infantry ⁴ ..	3,546	332	498	262,918	1,260	..	..	⁴ 21 for the active and 10 for the reserve battalions.
81 Depot companies of rifles ⁴ ..	124	21	21	9,848	31	..	..
74 Depot battns. of field reserve regts... ..	1,406	148	222	104,858	518	..	..	⁵ Including 5 officers, 9 men, 15 officers' and 9 troop horses extra for the Gardes du Corps.
74 Depot battns. of Landwehr regts. ..	1,406	148	222	104,858	518	..	..
Total infantry and rifles ..	34,324	3,123	3,437	1,636,792	60,865	..	16,116	⁶ Assuming 27 to have depot detachments for reserve formations attached to them.
<i>Cavalry.</i>								
98 Cavalry regiments ⁵ ..	2,144	279	372	62,193	69,123	..	1,395	
18 Reserve cavalry regiments ..	414	54	72	12,004	13,374	..	270	
36 Reserve cavalry squadrons ..	180	..	..	5,832	6,372	..	108	
93 Depot squadrons ⁶ ..	465	93	279	27,024	21,066	..	..
Total cavalry ..	3,203	426	723	106,993	109,935	..	1,773	

War Strength of the German Army—continued.

Units.	Officers.	Medical Officers.	Officials.	N. C. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Field Artillery.</i>								
36 Divisional regiments ¹	1,293	180	324	37,980	33,912	1,296	2,916	¹ Three batteries of one of them newly formed for the division of the 15th Corps detached to the 16th Corps.
3 <i>Abtheilungen</i> of 4 batteries ²	66	6	15	2,076	1,842	72	159	² For the 3 divisions of the 12th Army Corps.
19 Corps artillery staffs	38	19	19	209	266	..	19	³ One newly formed for the 16th Army Corps.
21 Field <i>Abtheilungen</i> of corps artillery of 3 batteries ³	357	42	84	10,962	9,744	378	840	⁴ One attached to the Guard Cavalry Division, the remainder to Army Corps.
15 Horse <i>Abtheilungen</i> of 2 batteries ⁴	180	30	75	6,100	7,290	180	435	⁵ One attached to the Guard Corps, the remainder to Cavalry Divisions.
17 Horse batteries ⁵	85	..	34	2,788	4,012	102	238	⁶ 39 for the 19 Army Corps, 18 for the 18 reserve divisions, 18 for the 18 Landwehr divisions.
18 Reserve divisional regiments.	643	90	162	18,990	16,956	648	1,458	⁷ 117 for the 19 Army Corps, 36 for the 18 reserve divisions, 18 for the 18 Landwehr divisions.
18 Landwehr <i>Abtheilungen</i> of 4 batteries	396	36	90	12,456	11,052	432	954	⁸ 78 for the 19 Army Corps, 36 for the 18 reserve divisions, 36 for the 18 Landwehr divisions.
75 Staffs of <i>Abtheilungen</i> of columns ⁶	150	150	..	900	1,050	..	75	⁹ 15 of 1 horse and 1 field batteries, 19 of 2 and 1 of 3 field batteries, 2 of 1 field and 1 mixed batteries.
171 Artillery ammunition columns ⁷	513	..	171	30,609	31,977	..	4,617	
150 Infantry ammunition columns ⁸	450	..	150	26,100	26,550	..	3,750	
18 Wagons attached to cavalry divisions	..	..	..	63	117	..	18	
5 <i>Abtheilungen</i> of field ammunition parks..	40	5	20	1,645	1,465	..	205	
4 Central ammunition depôts	12	..	..	340	8	..	..
37 Depot <i>Abtheilungen</i> ⁹	409	74	74	18,013	5,998	450	..	
Total field artillery	4,640	632	1,218	163,231	152,239	3,558	15,684	

War Strength of the German Army—continued.

Units.	Officers.	Medical Officers.	Officials.	N. O. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Foot Artillery.</i>								
14 Foot artillery regiments	723	56	56	30,828	2,016	..	350	
3 Foot artillery battalions	72	6	9	3,285	201	..	36	
3 Siege parks	..	..	..	..	..	720	..	
2 Reserve siege parks	..	..	..	..	..	480	..	
2 Special siege parks	..	..	..	..	..	80	..	
3 Reserve sections	..	..	..	..	..	72	..	
20 Park ammunition columns	40	..	..	2,000	3,600	..	800	
13 Mobilised Landwehr foot artillery regiments	676	52	52	28,628	1,872	..	325	
3 Mobilised Landwehr foot artillery battalions	72	6	9	3,285	201	..	36	
144 Non-mobilised Landwehr foot artillery battalions ¹	286	29	29	12,006	101	..	..
2 Depot companies	8	1	1	677	2	..	..
Total foot artillery	1,882	150	156	80,707	7,993	1,352	1,547	
<i>Pioneers.</i>								
58 Field companies ²	290	58	..	12,354	1,102	..	232	
89 Divisional bridge trains	78	..	..	2,028	3,452	..	546	
19 Army corps bridge trains, &c.	95	19	38	3,610	4,275	..	627	

¹ Including detachments of 200 tradesmen each² One newly formed.

War Strength of the German Army—continued.

Units.	Officers.	Medical Officers.	Officials.	N. O. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Pioneers—(cont.).</i>								
19 Corps telegraph sections ..	76	19	171	2,608	1,444	..	266	1 All supposed mobilised and formed into 10 battalions, with staffs as for infantry battalions.
6 Army telegraph sections ..	24	6	120	898	546	..	102	
18 Reserve field companies ..	90	18	..	3,834	342	..	72	
18 Reserve divisional bridge trains ..	36	..	..	936	1,584	..	252
18 Landwehr field companies ..	90	18	..	3,906	486	..	108	
42 Siege and fortress companies ¹ ..	188	20	20	8,962	876	..	188	
54 Landwehr fortress companies..	216	54	..	10,854	54	..	..
18 Depot pioneer companies ..	76	19	19	6,441	19	..	..
Total pioneers ..	1,259	231	368	56,416	14,180	..	2,398	
<i>Railway Troops.</i>								
9 Construction companies ..	81	9	9	1,998	261	..	45	
18 Traffic companies ..	108	..	..	3,708	86	..	..
6 Workmen companies ..	10	..	..	1,010	..	..	..
1 Depot battalion..	25	2	2	1,011	9	..	..
1 Depot company ..	3	1	1	142	1	..	..
Total railway troops ..	227	12	12	7,869	307	..	45	

War Strength of the German Army—continued.

Units.	Officers.	Medical Officers.	Officials.	N. C. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Train and Hospitals.</i>								
19 Battalion staffs ¹	38	76	..	323	456	..	95	¹ One newly formed.
170 Provision columns ²	340	..	340	19,380	28,390	..	5,440	² Five for each of 18 corps, 8 for the 12th
117 Wagon park columns ³	234	..	234	16,146	23,985	..	9,594	Corps, 36 for reserve, and 36 for Landwehr
94 Bearer companies ⁴	282	658	188	22,466	4,418	..	1,222	divisions.
19 Field bakery columns	19	..	19	2,147	285	..	38	³ Five for each of 18 corps, 8 for the 12th
18 Reserve bakery detachments ⁵	18	..	18	2,034	270	..	36	Corps, and 19 for lines of communication.
4 Lines of communication bakery columns	4	..	4	480	112	..	20	⁴ Including 18 for reserve and 18 for Landwehr divisions.
19 Horse depôts	38	..	38	2,109	3,819	..	38	⁵ Supposed as of the same strength as the field bakery columns.
342 Field hospitals ⁶	..	1,710	1,368	16,074	10,944	..	2,052	⁶ Including 18 for 12th Corps, 54 for reserve, and 54 for Landwehr divisions.
19 Personnel for war hospitals	..	361	171	1,767	..	..	80	⁷ Presuming the Hessian depôt to be amalgamated with that or the 16th Corps.
4 Hospital store depôts	8	..	48	160	168	..	..
4 Clothing depôts	8	..	..	60	..	..	..
19 Depôt <i>Abtheilungen</i> ⁷	247	19	38	12,066	4,009	..	760	
Total train, &c.	1,236	2,824	2,466	95,211	76,856	..	19,375	
<i>Field Staffs.</i>								
Imperial headquarters	81	3	53	945	725	..	62	
4 Army headquarters	112	14	60	716	840	..	96	

War Strength of the German Army—continued.

Units.	Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Field Staffs—(cont.).</i>								
19 Army corps staffs ¹	304	57	912	4,066	4,921	..	380	¹ One newly formed.
75 Infantry division staffs ²	300	75	2,550	4,350	6,000	..	760	² Including 18 for reserve and 18 for Landwehr divisions.
9 Cavalry Division staffs ³	45	..	279	495	702	..	81	³ Six newly formed.
151 Infantry brigade staffs ⁴	302	..	..	1,510	2,114	..	151	⁴ 79 of standing army, 36 of reserve, and 36 of Landwehr troops.
27 Cavalry brigade staffs	54	..	..	270	378	..	27	⁵ Deducting from the sum of the figures given on page 324 the medical directors of hospitals and gendarmes for one army corps, and one army would only have four corps, and adding the Bavarian staff given on page 319.
4 Lines of communication staffs ⁵	153	55	723	1,379	1,714	..	236	⁶ To these figures must be added the staffs of the home districts, establishments, &c., and railway staffs, which cannot well be exactly estimated.
Total field staffs	1,351	204	4,577	13,731	17,394	..	1,783	
<i>Recapitulation by Arms.</i>								
Infantry and Rifles	34,324	3,213	3,437	1,636,792	60,855	..	16,116	
Cavalry	3,203	426	738	106,993	109,985	..	1,773	
Field artillery	4,640	632	1,218	168,231	152,293	..	15,694	
Foot artillery	1,882	180	166	80,707	7,993	3,558	1,352	
Pioneers	1,259	231	368	56,416	14,190	1,352	1,547	
Railway troops	327	12	12	7,869	307	..	2,898	
Train	1,236	2,824	2,466	95,211	76,856	..	19,375	
Field staffs	1,351	204	4,577	13,731	17,394	..	1,783	
Grand total ⁶	48,122	7,802	12,957	2,165,950	439,769	4,910	58,716	

Units.	Officers.	Medical Officers.	Officials.	N.C. Officers and Men.	Horses.	Guns.	Other Carriages.	Remarks.
<i>Recapitulation by Categories.</i>								
Field Troops.								
Infantry and rifles ¹	13,908	1,234	1,234	638,674	29,472	..	8,970	1 Including newly formed 4th Battalions.
Cavalry ..	2,144	279	372	62,133	69,123	..	1,395	2 Including special field formations.
Field artillery ²	2,737	360	766	96,146	94,887	2,028	9,978	3 31 battalions of the standing army.
Foot artillery ³	..	62	65	86,113	5,817	1,352	1,186	4 Including 10 mobilised battalions of fortress pioneers.
Pioneers ⁴ ..	751	122	349	30,445	11,695	..	1,961	5 Including lines of communication staffs.
Railway troops ..	199	9	9	6,716	297	..	45	6 29 mobilised Landwehr battalions.
Trans ..	737	2,013	1,780	61,253	55,575	..	15,195	
Field staffs ⁵ ..	1,063	168	3,353	10,923	13,506	..	1,351	
Total field troops ..	22,377	4,247	7,928	942,408	290,472	3,380	40,081	
Field Reserve Troops.								
Infantry and rifles ..	7,078	630	630	261,968	14,748	..	3,643	
Cavalry ..	414	54	72	12,004	13,374	..	270	
Field artillery ..	900	126	234	31,914	30,312	648	3,348	
Foot artillery ⁶ ..	748	68	61	31,911	2,073	..	361	
Pioneers ..	126	18	..	4,770	1,926	..	324	
Trains ..	126	396	324	10,944	8,586	..	1,710	
Field staffs ..	144	18	612	1,404	1,944	..	216	
Total field reserve troops ..	9,586	1,300	1,983	354,915	72,963	648	9,872	
Total Field Army ..	31,913	5,547	9,861	1,297,323	353,435	4,028	49,953	

War Strength of the German Army--continued.

Units.		Officers.	Medical Officers.	Officials.	N.-C. Officers and Men.	Horses.	Gun.	Other Carriages.	Remarks.
<i>Recapitulation by Categories--(cont.).</i>									
Garrison Troops.	Landwehr divisions.								
	{ Infantry and rifles ..	6,858	610	610	253,668	14,808	..	3,503	
	Cavalry ..	180	..	..	5,832	6,372	..	108	
	Field artillery ..	594	72	144	22,158	21,042	432	2,358	
	Field pioneers ..	90	18	..	3,906	486	..	108	
	Trains ..	126	396	324	10,944	8,596	..	1,710	
	Field staffs ..	144	18	612	1,404	1,944	..	216	
	Foot artillery ¹ ..	286	29	29	12,006	101	..	..
	Fortress Pioneers ² ..	216	54	..	10,854	54	..	..
	Total garrison troops..	8,494	1,197	1,719	320,772	52,893	432	8,003	¹ 144 non-mobilised Landwehr battalions. ² 54 Landwehr fortress companies.
Depôt Troops.	{ Infantry and rifles..	6,482	649	963	482,482	2,327	..	..
	Cavalry ..	465	98	279	27,024	21,066	..	..
	Field artillery ..	409	74	74	18,013	5,998	450	..	
	Foot artillery ³ ..	8	1	1	677	2	..	..
	Pioneers ..	76	19	19	6,441	19	..	..
	Railway troops ..	28	3	3	1,153	10	..	..
	Train ..	247	19	88	12,065	4,009	..	760	
	Total depôt troops ..	7,715	868	1,377	547,855	33,431	450	760	
	Total Garrison Army ..	16,209	2,055	3,096	868,627	86,324	882	8,763	
	Grand Total, Field and Garrison Armies	48,122	7,602	12,967	2,185,950	439,759	4,910	58,716	

¹ 144 non-mobilised Landwehr battalions.
² 54 Landwehr fortress companies.
³ The unmobilised Landwehr battalions form the bulk of the depôts.

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THE ARMED STRENGTH
OF THE
GERMAN EMPIRE.

Bind with Part I

PART II.

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PREPARED FOR THE INTELLIGENCE DIVISION OF
THE WAR OFFICE,

BY

CAPTAIN J. M. GRIERSON, R.A.,

Officiating Deputy Assistant Quartermaster-General, Peshawar District.

AND EDITED BY

COLONEL C. W. BOWDLER BELL, D.A.A.G., Intelligence
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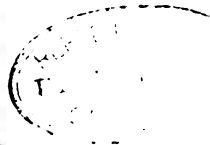
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PREFACE.

Captain J. M. Grierson, R.A., whose intimate knowledge of the German Army specially qualified him for the task, having offered to prepare this edition of the Armed Strength of Germany in his leisure time, after his connection with this office had ceased, his services were gratefully accepted. Much assistance has been derived from Colonel L. V. Swaine, C.B., C.M.G., Military Attaché at Berlin, and the work has been carefully edited and brought up to the latest date, by Colonel Bowdler Bell, D.A.A.G.

All changes introduced up to the date of "Armee-Verordnungs-Blatt," No. 16 of 29th May, 1888, have been inserted.

Much information has been derived from the articles under the heading "L'Armée Allemande sur le pied de guerre" in the "Revue Militaire de l'Étranger," 1883-84, but the conclusions in those articles, especially as regards certain new formations in war, have not invariably been followed.

The German word *Abtheilung* has been used throughout the work to signify a group of batteries, for want of an English word to which no other signification is already attached.

In the names of places, the rule has been observed to adhere to the accepted English names of Aix-la-Chapelle, Brunswick, Cologne, Hanover, and Munich, and in all other cases to retain the German spelling.

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Director of Military Intelligence.

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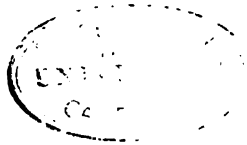
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NOTE.—All changes introduced up to the date of No. 16, dated 29th May, 1888, of the "Armee-Verordnungs-Blatt" have been embodied in this work.



THE ARMED STRENGTH OF THE GERMAN EMPIRE.

CHAPTER I.

OFFICERS, THEIR APPOINTMENT, PROMOTION, AND DUTIES.

As Major von der Goltz says in his work "Das Volk in Waffen," the German corps of officers forms the "intellectual and moral aristocracy of the nation," and this is undoubtedly true, for those who may be included in this class who are not serving actively are to be found in the reserve or Landwehr. In an army so highly educated as that of Germany, a very high moral and educational standard must be demanded from its leaders, and to keep up this standard has been the constant care of the rulers of the country. The great feature of the German corps of officers is its homogeneity. From the Russian frontier to that of France, from the Alps to the Baltic, in every German officers' mess will be found exactly the same stamp of man. Some regiments may contain richer, others more aristocratic men than the rest, but all are highly educated gentlemen, very susceptible on the point of their honour, and always ready to defend that honour with their lives. German officers form a class quite apart from the civil population, by whom they are looked up to with great respect. Previous to the wars of 1864, 1866, and 1870, the feeling of the public towards the officers was not effusively friendly, but these wars brought home to the people the brilliant qualities of their leaders, and, on their return, they were received with a storm of enthusiasm which has resulted in the feeling of pride with which the German of to-day looks on the leaders of the victorious national army.

Every officer is *Hof-fähig*, or fit to be presented at Court, and each has his definite place in the table of precedence, thus the social position of German officers is very high. A great amount of the *éclat* surrounding their position is due to the intimate manner in which the reigning families are associated

with them. Almost without exception, all the male members of those houses belong to the army or navy, and constantly wear uniform, as does also the German officer, and thus he and his rulers become identified in the minds of the people. The constant wearing of uniform in itself confers also a great amount of prestige, as an officer dressed in the "King's-coat" dare not misbehave himself, and thus the army and the people have always their officers before them and learn to look up to them as models of behaviour in public.

Brave, polished, thoroughly conversant with his work, courteous to foreign officers, hospitable to a fault, and a gentleman to the backbone, the German officer, as a soldier or as a man, is second to none.

A. MILITARY HIERARCHY.

The following are the various grades of officers:—

(a.) General Officers (*Generalität*).

Field-Marshal (*Feldmarschall*).

General of the infantry or cavalry (*General der Infanterie* or *Kavallerie*).

Lieutenant-General (*General-Lieutenant*).

Major-General (*General-Major*).

(b.) Field Officers (*Stabs-Offiziere*).

Colonel (*Oberst*).

Lieutenant-Colonel (*Oberst-Lieutenant*).

Major (*Major*).

(c.) Captains (*Hauptmann* in the infantry, artillery, and engineers, *Rittmeister* in the cavalry and train).

(d.) Subalterns (*Subaltern-Offiziere*).

First Lieutenant (*Premier Lieutenant*).

Second Lieutenant (*Sekond Lieutenant*).

Sergeant-Major Lieutenant (*Feldwebel-Lieutenant*, but these officers are only placed in the garrison troops on mobilization. See below).

Officers of each grade rank among themselves according to the date of their commission, and if an officer is transferred for any reason from one regiment to another he takes rank in his new regiment according to that date. Officers with brevet rank (*Karakterisirte Offiziere*), which is only given to equalize promotion or to keep officers on promotion in their own regiments, or on retirement, rank after all officers with the same substantive rank.

B. APPOINTMENT OF OFFICERS OF THE ACTIVE ARMY (*Aktive Offiziere*).

The recruitment of the corps of officers is assured either by the promotion to a commission of persons who join the ranks as candidates for commissions (*Avantageure*), or by the appoint-

ment of cadets from the Cadet Corps. In both cases* the candidate for a commission must first pass an educational test and be appointed Sword-knot Ensign (*Portepée-Fähnrich*), after which he has to pass a military test before being appointed Second Lieutenant. Officers of artillery and engineers are at first appointed Supernumerary Second Lieutenants, and are only brought on to the establishment after passing through the Artillery and Engineer School. Before appointment, every candidate must be declared "worthy to be received amongst them" by a majority of the officers of his regiment. Such is the general outline of the system.

(a.) *Appointment of Candidates from the Ranks.*

Candidates for officers' commissions enter the service as volunteers, and every soldier can be proposed for appointment to the rank of Sword-knot Ensign, or to Supernumerary Sword-knot Ensign if there are no vacancies, provided that between his completed 17th and 23rd years of age he has gained the "military qualification," and can prove his general degree of education by the production of a certificate of fitness for the rank from the Superior Committee of Military Examinations. This latter certificate may be obtained by the production of a certificate of having passed through the complete course of study of a *Gymnasium* or first class *Real-Schule*† or by undergoing an examination before the above-mentioned Committee. This examination is generally passed before entering the service, but before being examined a candidate must first obtain permission to enter as a volunteer from the commander of the regiment of infantry, cavalry, or artillery, or battalion of rifles or pioneers which he desires to join. He must also produce a special certificate from a *Gymnasium*, *Real-Schule* of the first or second class, Pro-gymnasium, or higher Burgher-school, of his having gone through a fixed portion of their course. Special application must be made if the candidate has been educated abroad.

The subjects of this examination are as follows:—

- (a.) German literature and composition.
- (b.) Latin (prose writers only).
- (c.) French.
- (d.) English or Greek (prose only).
- (e.) Mathematics, including arithmetic, algebra up to equations of the second degree, use of logarithms, plane geometry and trigonometry.
- (f.) Geography, physical and political, including geographical statistics.
- (g.) History, general up to the middle of the eighteenth

* See below for exceptional cases from the Cadet Corps.

† A "Gymnasium" is a high-class school which prepares those who desire to enter the universities, a "Real-Schule" is destined to prepare boys for industrial or commercial pursuits.

century, in detail from that date, with special reference to Germany.

(h.) Drawing, geometrical and freehand.

If a candidate fails to pass, a second trial is allowed after three months at least, but failure at this precludes a further trial. The limit of age must also not be exceeded.

The successful candidate enters the ranks as *Avantageur*,* receives pay as a private soldier, and performs the duties of one. For the first six weeks generally he must live in barracks, but after that is allowed to live in his own lodgings in town and take his meals at the officers' mess. He may wear clothes of finer cloth than the rank and file, and wear an officer's great coat, but there are no badges to distinguish him from an ordinary private soldier. At the end of five months' actual service (days on leave, sick, &c., and also, except in time of war, all service below seventeen years of age, deducted) he may receive from his company, squadron, or battery commander the "military qualification," a certificate testifying that the candidate is worthy to serve on to become an officer, is physically and intellectually fit for the position, has shown zeal in the performance of his duty, and has made satisfactory progress in learning the duties of a private and non-commissioned officer. The two certificates are then submitted to the Sovereign by the Superior Committee of Military Examinations, and by him nominations are made to the rank of Sword-knot Ensign.

(b.) *Appointment of Candidates from the Cadet Corps.*

For the organisation and nature of the studies in the Cadet Corps, see Chapter III. The cadets who have passed through the Upper Second Class† of the Cadet School may present themselves for the Ensigns' examination in the month of February or March. Of those who pass, and have completed their 17th year before the 1st April, and are physically fit, some are retained for a year more to go through the "*Selecta*" class (see below) and the names of the others are submitted to the Sovereign for appointment as Brevet (*Charakterisirte*) Sword-knot Ensigns. These latter join the regiments to which they are posted and may, after they have attained the age of 17½ years, served five months effectively, and gained the "military qualification," be given the substantive rank. Those who fail at the examination are either sent away from the school or are placed as privates or non-commissioned officers in the ranks, when their promotion is conducted in the same manner as that of *Avantageurs*.

Cadets of the Upper Second Class who pass the Ensign's examination, but have not completed their 17th year or are not physically fit, are removed to the Lower First Class. Those cadets of the Upper Second Class, however, who have reached

* This title is not official, but is recognised in the military language.

† First class in the Dresden School.

the prescribed age and are physically fit, may also pass, if they wish, to the Lower First Class, provided they have conducted themselves well and are likely to profit by the instruction given in the First Class.

Those who have passed through the Lower First Class may if they wish, and according as they have reached the prescribed age and are physically fit, be either proposed for appointment as substantive or Brevet Sword-knot Ensign (according to their conduct) or remain in the school and pass into the Upper First Class. In special cases they may pass into the "Selecta" class. Those who pass through the Upper First are sent direct to a war school without joining a regiment first.

(c.) *Appointment of Ensigns and "Selecta Cadets" to the Rank of Second Lieutenant.*

Every Sword-knot Ensign who has held that rank for six months, who has passed through a war school, and who, before the age of 25 years, has passed his officer's examination, received a certificate of military aptitude from his immediate Commanding Officer, and been "chosen" by his future brother officers, may be appointed a Second Lieutenant, or, in the artillery and engineers, Supernumerary Second Lieutenant.

For the organisation, &c., of the war schools, see Chapter III. With very few exceptions, all officers of the German army, whatever arm they belong to, must pass through these schools as Ensigns. In some, the course of instruction lasts ten, in others nine months. At the end of each quarter, the Professors give marks to each candidate, and, if the sum total of those marks at the end of the course is sufficient, the Ensign is allowed to present himself for the officer's examination (*Offiziers-Prüfung*). If the marks gained do not come up to the standard, the Ensign is sent back to his regiment, but may be admitted to a second course. The officer's examination is a purely military one on the subjects taught at the war schools. After passing it, the Ensign's name is submitted to the Sovereign for a commission, together with a certificate that he has been "chosen" by his future brother officers, and another testifying to his practical professional attainments. The "choice" is no empty form. As the "*Avantageurs*" and Ensigns live at mess, the officers of a regiment have every opportunity of judging of their character. The majority must be in favour of admission, and if the majority is against admission, the Ensign has no right of appeal. Cases of rejection, are however, rare, as, generally speaking, if rejection is probable the candidate gets a hint to retire or to apply for a transfer.

Ensigns who pass their officer's examination with honours receive commissions putting them senior to all others who become Second Lieutenants at the same time. Those who fail may be allowed to try a second and last time after at least three months. Again, if they have passed the examination but

have bad marks as to conduct at the war school, their commission may be withheld for from two to six months.

The above tests are all that are required for infantry and cavalry officers, but artillery and engineer officers, after one year and nine months' service with their regiments or battalions as Supernumerary Second Lieutenants, join the Artillery and Engineer School, in Berlin, where the former undergo a 9½ and the latter a 20½ months' course, at the end of which they are brought on to the establishment. A certain number of artillery officers are selected for a special course of eight months, which qualifies them for special employments. For the organisation of this school, see Chapter III.

It has been remarked above that, with certain exceptions, all officers pass through the war schools. These exceptions are :—

(1.) Those who have studied for one year at an University or certain high class technical schools. If these have been allowed by a Commanding Officer to engage as *Avantageurs* they may at once be given the educational certificate required for an Ensign, and may present themselves for their officer's examination without having six months' service. They must, however, be "chosen" before being appointed Second Lieutenants.

(2.) The cadets of the "Selecta" class pass their officer's examination at the end of their year in that class. Those who pass and have the physical and military qualities required are appointed Second Lieutenants at once. Those who pass, but are not otherwise perfectly qualified, enter as Ensigns and receive their commissions in from two to six months. Those who fail are equally appointed Ensigns and may present themselves again for examination after a period of at least three months.

(3.) Officers of the reserve who are transferred to the active list do not pass through the war schools. These are few in number and they must first obtain the consent of the Commanding Officer whose regiment they desire to join. They then apply to the Commander of their Landwehr battalion district, who forwards the application. If they have no certificate of having completed a course of study, they must pass the Ensign's examination and may thereupon present themselves for the officer's examination.

(d.) *Appointment to Special Branches.*

There are three bodies of officers in the German Army whose appointment is governed by special regulations, viz. :—artificer officers, ordnance officers, and officers of the train depôts.

(1.) Artificer officers (*Feuerwerks-Offiziere*) have the rank of Second Lieutenant, First Lieutenant, and Captain, the word *Feuerwerks* being always prefixed to their rank. They are recruited from the ranks of their corps and are appointed by

the Sovereign. They are placed in charge of ammunition stores and magazines.

(2.) *Ordnance Officers* (*Zeug-Offiziere*) have the same hierarchy and system of promotion from the ranks of their corps as artificer officers. Their duties are similar to those of the officers of the Ordnance Store Corps in the British service.

(3.) *Officers of the Train Depôts.* (*Train-Depôt-Offiziere*). There are two of these in each train battalion, the senior in charge of the depôt of transport material, the junior of that of sanitary material. They are generally selected by the War Minister, subject to the approval of the Sovereign, from Lieutenants of the army unfitted for active service, and the highest rank they can attain to is that of Brevet-Major.

(C.) PROMOTION OF OFFICERS OF THE ACTIVE ARMY.

There is no special code regulating promotion of officers in the German Army, which depends entirely on the will of the Sovereign, and the few orders on the subject which exist deal only with points of detail. The command held is quite independent of the rank of the officer in the higher grades of the army, and thus two kinds of promotion have to be considered: promotion in rank, and promotion in appointment. The first principle of all promotion is that the officer promoted must be thoroughly fit in every respect for the position he is promoted to. As a general rule the claims of seniority receive due attention, but, if an officer does not satisfy the requirements for promotion when his turn arrives, he is passed over. He may then be retired with his rank, or may receive higher rank on retirement by brevet, or he may with this brevet rank be given special employment, such as fortress staff, appointments in the military prisons, corps of invalids, or gendarmerie, &c., for which he is fitted. If none of these privileges are offered to him he is supposed to ask to be permitted to retire on a pension.

a. Promotion in Rank.

Promotion up to the rank of Captain goes by seniority according as vacancies occur in the establishment, as follows:—

In the infantry, cavalry, field and foot artillery, by regiments. The officers of the 9th Foot Artillery Battalion are placed on the same roster for promotion as those of the 7th Foot Artillery Regiment, and those of the 14th Battalion with those of the 10th Regiment.

In the rifles and 13th Foot Artillery Battalion, by battalions.

In the engineers, by battalions for the officers attached to the pioneer battalions, by "inspections" for those doing general duty.

In the train, throughout the arm.

Promotion to the rank of Major is given by regiments in the infantry, and throughout the arm in the cavalry, field artillery, foot artillery, rifles, pioneers, engineers, and train. Extreme

care is taken in the promotion of field officers of cavalry, and no fixed practice seems to be adhered to. Field artillery officers are entirely distinct from foot artillery officers, (except in the 12th (Saxon) Corps, in which field and foot artillery officers are on one roster for promotion) and infantry officers may be promoted into the rifles, and cavalry and field artillery Captains into the train.

In Bavaria, promotion is given as in the other states, except that all officers of the engineers and pioneers are on one list for promotion.

Except for artillery and engineer officers, there are no promotion examinations in the German Army. Only the opinion of their superiors as to the way in which their duty is performed and their seniority are taken into consideration. It may be here mentioned that every subaltern has to prepare every winter an essay (*Winter-Arbeit*) on some military subject, which is forwarded to the Brigade Commander, and which forms a good means of ascertaining whether an officer keeps up his military studies.

Every First Lieutenant of artillery has to pass a practical examination before being promoted to Captain of the second class; and before receiving the rate of pay of a Captain of the first class he has to pass a theoretical examination in tactics, employment of artillery, fortification, ballistics, and attack and defence of positions. The questions are prepared by the Committee of Artillery Examinations. First Lieutenants of engineers undergo no practical examination, but before receiving the higher rate of Captain's pay, they have to hand in four essays as follows:—(a) Attack or defence of a fortress; (b) Fortification of a position and its occupation; (c) Design of a field work; (d) Design of a permanent work. These essays are judged by the Committee of Engineer Examinations, which decides upon the fitness of the candidate for promotion.

Vacancies produced by suicide, duels, desertion, or dismissal of an officer give the juniors of his regiment, &c., no right to promotion, as a corps of officers is held collectively responsible for the conduct of its numbers. The vacancy may be filled from outside, or it may be kept open for a year, and then given regimentally.

To equalise promotion throughout the army, officers are often brought into regiments from others. These may be taken from the seniors of the rank in which the vacancy occurs, or from the seniors of the next rank. The former case is the most frequent, and the officers thus transferred become senior of their rank in their new corps, and get the first vacancy in the next highest rank.

Exceptionally, extraordinary promotion (*ausserordentliche Beförderung*) is given to officers below the rank of Major, but this is only in the case of officers of the General Staff (*see* below), officers of the *Adjutantur* of the superior staffs, officers of the Cadet Corps, or regimental officers of abilities quite above the

ordinary, or who have distinguished themselves on active service. Commissions are also sometimes antedated to give a good officer exceptional advantages.

For the ranks above that of Major, promotion runs throughout the army, but, as rank gives no title to command, selections are made for each appointment. In the infantry there appears to be some definite rule, for all regiments are commanded by Colonels, with a Lieutenant-Colonel as field officer of the regimental staff (*Etatsmäßiger Stabsoffizier*), and Majors commanding battalions or as supernumerary. On the 1st April, 1887, 9 rifle battalions were commanded by Lieutenant-Colonels, and the remainder by Majors. Of 93 cavalry regiments, 29 were commanded by Colonels, 51 by Lieutenant-Colonels, and 13 by Majors, the other field officers being all Majors. In the field artillery, 24 regiments were commanded by Colonels, and 13 by Lieutenant-Colonels. All the *Abtheilungen* were commanded by Majors, and the field officer of the regimental staff was generally a Lieutenant-Colonel in one regiment of the corps and a Major in the other. Of the foot artillery, 6 regiments were commanded by Colonels, and 8 by Lieutenant-Colonels, 4 battalions by Lieutenant-Colonels, and the remainder by Majors. Five pioneer battalions were under Lieutenant-Colonels, and the remainder under Majors.

(b.) *Promotion in Appointment.*

First Lieutenants on promotion are generally also appointed company, squadron, or battery commanders. A Captain promoted to Major is at first without a command, but is selected for the command of a battalion or *Abtheilung* of artillery, on a vacancy occurring. In the cavalry, if a third field officer is promoted in a regiment he retains command of a squadron, and only draws Captain's pay. Commanders of regiments, brigades, divisions, and army corps are selected by the Sovereign. The Kings of Bavaria, Württemberg, and Saxony appoint the general officers of their armies, but the consent of the Emperor is necessary in the case of Saxony. The Commander of the 12th (Royal Saxon) Army Corps is nominated by the Emperor on the proposal of the King of Saxony, and that of the 13th (Royal Württemberg) Army Corps by the King of Württemberg after the consent of the Emperor has been obtained, but no restrictions of this description are applied to Bavaria. Very few artillery or engineer officers are appointed to the commands of brigades, divisions, or army corps. From the commands of brigades, artillery officers become generally Inspectors of Artillery, and eventually Inspectors-General of Field or Foot Artillery. Similar rules hold good for the engineers. The higher commands are generally made at first only temporary, and are confirmed after a certain period of probation. The following table shows the rank of the officers holding certain appointments on the 1st April, 1887:—

Appointment.	Generals.	Lieutenant-Generals.	Major-Generals.	Colonels.	Total.
Brigade of Infantry ..	—	—	75	4*	79
Brigade of Cavalry.. ..	—	—	15	24	39
Brigade of Field Artillery ..	—	—	7	11	18
Inspection of Foot Artillery ..	—	—	4	—	—
Inspection of Field Artillery ..	—	3	1	—	—
Inspection of Engineers ..	—	1	1	2	—
Inspection of Pioneers ..	—	—	2	—	—
Division	1†	40	1*	—	42
Army Corps.. ..	14	4	—	—	18

* "In charge of" the brigade or division—not yet appointed Commanders.

† 25th (Hessian) Division.

(c.) *Promotion in Time of War.*

When a regiment, &c., is mobilised, all the line, reserve, and Landwehr officers *taking the field with it* are placed on one roster for promotion, and the same rule holds good for depôts or Landwehr formations, for which separate lists are formed; officers detached from the regiment for staff duties in the field continue to keep their place on the active service list for promotion. A large number of promotions have generally to be made on mobilisation, but once these promotions made and the war begun, promotion is restricted to that which is strictly necessary, and advantage is taken of the principle of command being independent of rank. The general principles of promotion remain the same as in peace, but army corps commanders may fill up vacancies in the subaltern ranks, which promotions, however, require confirmation by the Sovereign. A vacancy in the command of an army corps is filled by the senior divisional commander of the corps, that of chief of the staff by the senior staff Officer of the corps, that of a divisional commander by the senior brigadier, of a brigade commander by the senior commander of a regiment of the same arm in the corps, and that of a regimental, battalion, or company commander by the next senior officer of the regiment. Vacancies in the staff are filled by officers chosen from the regiments. Any such provisional appointments require ulterior confirmation. Officers from the depôt or Landwehr formations may be transferred to the field formations, but, unless so transferred, they do not take part in any promotion which may occur on account of losses in the field. On demobilisation, officers retain the rank they have gained in the field, and reserve and Landwehr officers are retransferred to the reserve or Landwehr, also with the rank acquired.

(d.) Promotion of Officers of the General Staff.

As in other branches of the service, no fixed rules are laid down for the promotion of officers of the General Staff, who are not seconded in their regiments but are removed from them, and placed on a separate list of their own. They are selected from those officers who have passed through the War Academy, and have had a further training of one, two, or three years attached to the Great General Staff, and under the eye of its Chief. On appointment to the General Staff, these officers are promoted to captain, and thus gain a first advantage over their former regimental comrades, usually of about one year's seniority. Promotions to major may be made in two ways, either by promotion in the cadre of the General Staff, or by transfer back to another regiment of the officer's former arm (never to his old regiment, where he would be senior to officers whom he had superseded), generally as senior captain, in which case he commands a company, squadron, or battery, for a period of about two years, and then receives promotion, upon which he may either remain in his regiment or be re-appointed to the General Staff. As promotion above the rank of major runs through the whole army, a major or officer of higher rank of the General Staff may receive command of a regiment, brigade, division, or army corps, or he may continue to occupy a post on the General Staff, but it seldom or never happens that an officer holds a high appointment in the General Staff who has not served in it in the junior grades. The German General Staff is, therefore, neither a closed corps altogether, like that of some armies, nor yet a body of officers seconded from their regiments, and enjoying no special advantages of promotion as in other armies, but a combination of both systems exists, by which promotion to the rank of major is quickened by about five or six years. Thus exceptional inducements and advantages are offered to young officers of ambition and talent, and the higher posts on the Staff are filled by officers in their full vigour, who have had careful previous Staff training in the field, on the manœuvre ground, and in the office, and, in general, regimental experience also at various periods of their career.

(e.) Promotion of Officers of the Active Army on Special Lists, &c.

Officers with brevet rank (Karakterisirte Offiziere).—As has been already stated, for officers on the strength of a regiment brevet rank is only given to equalise promotion, or to keep officers on promotion in their own regiments. If an officer is given an appointment above that usually held by one of his rank, a brevet may also be given, and the same may take place on an officer being retired, but the latter is a favour and not a right. They wear the uniform of their brevet rank, but receive only

the pay of their former rank, and have only a right to the pension of that rank.

Aggregated officers (*Aggregirte Offiziere*) are those attached for duty to a regiment by order, when there is no vacancy for officers of their rank. They are promoted throughout the army if not absorbed previously into a regiment. Such officers take the place of any officer of their rank on duty away from the regiment, but draw no allowances through the regiment. Military attachés at foreign courts are generally aggregated to the General Staff.

Officers of the army (*Offiziere von der Armee*) are field or general officers, not belonging to regiments, who are not employed, or who are employed in appointments not borne on the establishment of the army. The Prussian Army List for 1887 showed seven such officers; one, a General, was Governor of Ulm (in Württemberg), a Major-General was Inspector of the 3rd Landwehr Inspection, which was not then authorised by the budget, and the remainder had no appointment. They are promoted throughout the army.

Officers seconded from the army (*Offiziere à la suite der Armee*).—These are generally members of the various princely and ducal houses of Germany, whose rank is generally honorary. They receive promotion throughout the army, and have generally permission to wear the uniform of a specified regiment. Generals who have rendered exceptional services are also placed on this list on retirement as a special favour. On it are also borne the Turkish officers attached for duty to the Prussian Army.

D. RESERVE OFFICERS.

Reserve officers are obtained from one of the three following categories:—

1. Men of the reserve, candidates for the rank of Reserve Officer, who have obtained at the date of their leaving active service or subsequently a certificate of fitness for the rank of officer.

2. Officers leaving the army before having accomplished their legal period of service.

3. Men who have distinguished themselves before the enemy.

The persons of the 1st and 3rd categories mentioned above must in all cases be accepted by the corps of officers they desire to enter before being appointed by the Sovereign; their social position must be compatible with that of an officer, their character blameless, and their profession such as not to interfere with their military duties.

The great bulk of the 1st category above is composed of former one-year volunteers. Those volunteers who, by reason of their good conduct and progress in their military training, have been appointed lance-corporals after six months' service

are permitted before leaving the service to present themselves for examination before a Board composed of a Captain, a First Lieutenant, and a senior Second Lieutenant. Each candidate has first to produce his descriptive return, a certificate from his company commander as to his fitness for the position of officer, and an autobiography. The examination is both practical and theoretical. The practical part consists of battalion rope-drill, each volunteer commanding a section, detailed instruction, each volunteer instructing a few men, and field service, each leading a party of at least 20 men. The theoretical examination is conducted both orally and by writing, and its subjects are:—

- (a) Military duties and obligations.
- (b) Construction of the rifle.
- (c) Garrison duties.
- (d) Field service and marches.
- (e) Drills and exercises.

The Board declare the candidate to have passed or failed, and the proceedings are transmitted to the regimental commander, who draws up his report thereupon. The above is the programme for the infantry; that for the other arms is of similar scope.

On their period of active service expiring, the volunteers are passed to the reserve, and those who desire to obtain commissions are called up for an eight weeks' training, usually in the next year. After the first few weeks of this training they are promoted to be Vice-Sergeant-Major, and at the end of the training the officer commanding the regiment they have been attached to reports whether they are fitted for promotion or not. If the report be unfavourable, a second training may be allowed in the following year. In the former case the candidate is then "chosen" by all the officers of the Landwehr battalion district in which he lives, and, if their opinion is favourable, his name is submitted to the Sovereign for appointment by the Commander of that district through the usual channel. Reserve officers are posted to regiments, and must first be accepted by the commander of that regiment.

The second category of reserve officers consists of those who have left the active army before the expiration of their legal period of service. They are few in number and are posted to their own former regiment.

Lastly, sergeant-majors and ensigns who distinguish themselves before the enemy may be given commissions as reserve officers. No certificate of fitness for the rank is in such a case required, but the person so promoted must be accepted by his brother officers.

Although reserve officers are posted to regiments, their commanding officer in peace is the commander of the Landwehr battalion district in which they reside, and through him they receive all orders. They wear uniform on all occasions when

on duty and at public ceremonies, on the Emperor's birthday, at grand parades, &c. They are subject to Courts of Honour and are bound to keep their commanding officer acquainted with their address and to appear for duty whenever called upon. They are promoted along with the officer immediately junior to them on the active list of their regiment or corps of officers (for rifles, pioneers, and train). During their period of service in the reserve they may be called up for three trainings of four to eight weeks each, and, on mobilisation, are, as a rule, called up to join their own regiment. They may in peace receive two years' leave to travel abroad, but are bound to return at once on mobilisation. Reserve officers may be transferred to the Landwehr after completion of their period of service (seven years) in the standing army, or if unsuited for service in the field but capable of garrison duty, or if unable to fulfil their duties owing to absence abroad. Every reserve officer, as a rule, passes to the Landwehr after completing the ordinary term of service. Should he, however, desire to serve on as a reserve officer, he may receive the necessary permission from the army corps commander, provided he is recommended by the officer commanding the regiment to which he belongs.

Reserve officers wear the uniform of the regiment to which they belong, but with the Landwehr cross on the breast of the eagle on their helmet or on the cockade on the forage cap.

E. LANDWEHR OFFICERS.

Landwehr officers, are, as above mentioned, recruited from reserve officers who have finished their legal period of service in the active army and reserve, and also from the following categories:—

1. Officers of the active army leaving it and still in the period of their Landwehr service (seventh to twentieth years' service).

2. Those of the Landwehr who have distinguished themselves in the field.

3. Those who have received a certificate qualifying them as reserve officers, but who, for some reason or other, have not been promoted, provided they have served voluntarily at least six weeks in the line and engage to serve five years in the Landwehr of the 1st Ban, and to complete their legal service in the 2nd Ban.

4. Sergeant-majors and under-officers who have been discharged from active service with a recommendation for the rank of officer in the Landwehr. These must also engage to serve for the same period as the last category.

Like reserve officers, Landwehr officers must be "chosen" by the officers of their Landwehr battalion district, and, as a rule, all the remarks as to obligations, &c., made above on reserve officers apply to them also. They can only be called up in peace for training or musters with the Landwehr troops, except in the case of their desiring to prove their fitness for promotion,

in which case they may be attached for four to eight weeks to a line regiment. Only officers of the 1st Ban can be called out for training. Landwehr officers are grouped by battalions, which contain officers of all arms, and whose commanding officer is, of course, the Landwehr battalion district commander. They are promoted along with the officers next *senior* to them in the line as follows:—Infantry, according to their rank in the brigade; cavalry, according to their rank in the division; field artillery, according to their rank in the brigade attached to the army corps; foot artillery, according to their rank in the foot artillery of the army corps; and in the rifles, pioneers, and train according to their rank in the entire body of officers in these arms. Separate lists are kept for officers of the 1st and 2nd Bans. On mobilisation, they are called up to take over the duties laid down for them in the plan of mobilisation. As a rule they are placed in Landwehr formations, but they may also be placed in the line.

A certain number of Captains and senior Lieutenants of the Landwehr infantry and rifles who have proved their fitness to be company commanders on mobilisation are appointed by the Landwehr battalion district commanders as "District Officers." They must live in their company district, and have local influence. They hold all musters in their district. Other Landwehr officers have no permanent functions in peace.

After the expiration of their legal period of service, Landwehr officers can claim their retirement, but, with permission, they may still serve on. Those who are in the service after mobilisation is decreed can only retire in the event of their being physically unfit.

Landwehr officers have a special uniform for each branch, and, like the reserve officers, wear the Landwehr cross. If called up on mobilisation to join a line regiment or a line *dépôt*, they wear its uniform, always retaining their distinctive cross.

F. THE OFFICERS AT DISPOSAL.

(Die Offiziere zur Disposition).

These form a category of officers belonging neither to the active army nor to the furloughed list and corresponding in a measure to British officers on half-pay. They are former officers of the active army who have mostly retired on a pension, but who, instead of being entirely relegated to civil life, have been kept "at the disposal" of the Sovereign. They may be recalled to active service in case of mobilisation. Hitherto a very usual manner of employing officers of this class of the rank of major or lieutenant-colonel has been as Landwehr battalion district commanders. They have the right to wear uniform at all times, and are kept on the rolls of the Landwehr district in which they live. There are no regulations as to the conditions under which officers may be placed at disposal, the conferring of this favour being a prerogative of the Sovereign.

G. SERGEANT-MAJOR LIEUTENANTS.

(Feldwebel-Lieutenants.)

This class of officers was created in 1877, with a view to filling up the vacancies for second lieutenants in dépôt battalions, Landwehr foot artillery battalions, garrison battalions, dépôt squadrons, and Landsturm formations on mobilisation, as the supply of officers was totally insufficient for the large number of formations proposed. They are recruited from non-commissioned officers of experience who have served their time, who occupy a certain social position, and who engage to return to the colours in case of mobilisation. They are at first appointed vice-sergeant-majors, and are clothed, equipped, and mounted by the State. Their pay and allowances are those of second lieutenants, except that they receive no extra lodging allowance. After three months' service they receive the rank of sergeant-major lieutenant, and receive a warrant (*Bestallung*), not a commission. They count among Landwehr officers, but are junior to all second lieutenants, and their names are not in the Army List. They are not subject to Courts of Honour. On appointment to sergeant-major lieutenant they receive exactly the same pay and allowances as second lieutenants, but their horses and saddlery (if in the mounted branches) are furnished by the State. When the body of troops to which they are attached is broken up on demobilisation, they revert to the retired list. They wear the same uniform as sergeant-majors, but with special pattern shoulder-pieces, officers' helmets, and officers' knapsacks. Lists are kept in peace of those non-commissioned officers in each landwehr battalion district, and it is calculated that from 4,000 to 6,000 would be available in case of mobilisation.

H. MEDICAL OFFICERS AND VETERINARY SURGEONS.

The various grades of medical officers are as follows:—

One-year Volunteer Surgeon (*Einjährig-freiwilliger Arzt*).

Sub-Surgeon (*Unter-Arzt*).

The above rank as non-commissioned officers with the officers' sword-knot.

2nd class Assistant-Surgeon (*Assistenz-Arzt, 2-Klasse*) ranking with a Second Lieutenant.

1st class Assistant-Surgeon, ranking with a First Lieutenant.

Surgeon (*Stabs-Arzt*);

2nd class Surgeon-Major (*Ober-Stabs-Arzt*); both ranking with Captains, the latter have a right to the pension of a 1st class Captain.

1st class Surgeon-Major, ranking as a Major.

2nd class Surgeon-General (*General-Arzt, 2-Klasse*), ranking as a Lieutenant-Colonel.

1st class Surgeon-General, ranking with a Colonel.

Surgeon-General of the Army (*General-Stabs-Arzt der Armee*), ranking with a Major-General.

Medical Officers are recruited from:—

1. Students of the Military Medical Institutions (see Chapter III).
2. Medical men fulfilling their period of obligatory service.
3. Medical men who have passed their Surgeons' examination at the Universities and intend to make the army a profession.

Those of the first category serve in the ranks for six months after leaving the institutions, and are then appointed Sub-Surgeons on receiving a certificate from their Commanding Officer as to character, application, and knowledge of their military duties. Those of the second category may either serve their one year in the ranks or six months in the ranks and six months as one-year Volunteer Surgeon. If, at the expiration of this period, they desire to be discharged to the reserve, they may, if qualified in every way, be given a certificate of fitness for the rank of sub-surgeon of the reserve by the surgeon-general of the corps. Those of the third category serve first for six months with the colours, and then for four weeks as one-year Volunteer Surgeons, after which they may be proposed by the Surgeon-General of the corps for appointment as Sub-Surgeons.

After three months' service as sub-surgeons, if professionally qualified, medical men may be proposed for appointment as assistant-surgeon, and they must then be "chosen" by all the medical officers of the garrison in the same manner as combatant officers. The other medical officers of the division give their votes in writing. Assistant-surgeons of the reserve are appointed as such after six weeks' period of training with a regiment as sub-surgeon, after their transfer to the reserve. They must also be "chosen."

Medical officers are promoted by seniority throughout the whole department, on the proposal of the Surgeon-General of the army, and, except on promotion, they are seldom transferred from one appointment to another. Before promotion to surgeon-major, medical officers have to pass a professional examination. Those of the reserve are promoted along with the officer immediately junior to them on the active list, but before promotion they must go through a four weeks' course in a military hospital, or with a regiment. They have also to pass the professional examination for promotion to surgeon-major.

Surgeons General of Army Corps are the heads of the Medical Department in their district, and distribute the medical officers as they see fit. The senior surgeon-major of each division is appointed Divisional Surgeon, and in this capacity he is the technical adviser of the divisional commander, and

conducts the administrative duties of his department in the division. To him are subordinate all the medical officers of the division in professional matters, but in disciplinary matters medical officers are the subordinates of the officers commanding the units to which they are attached. General (Garrison) Hospitals are under surgeons-major, who are appointed Hospital Directors, and they are the commanding officers of the hospital *personnel*, and have the powers of punishment of a company commander. Divisional and Corps Surgeons, and the Surgeons-General of the Army have the powers of punishment of battalion and regimental commanders, and of a divisional commander, respectively, over the *personnel* of the Medical Department under their orders, as far as regards offences against the regulations of the Medical Department. Offences against other regulations are punished by the military authorities, as also all offences by patients under treatment in hospital.

There are only two grades of the Veterinary Department assimilated to the rank of officer:—Corps Veterinary Surgeon (*Korps-Roszarzt*), and Chief Veterinary Surgeon (*Ober-Roszarzt*), but these have no relative rank. They are promoted by seniority tempered by selection from the non-commissioned ranks of their department.

I. DUTIES, &c., OF OFFICERS.

Every Commander of a company, squadron, battery, battalion, *Abtheilung*, or regiment is responsible for the discipline and training of the unit under his command, and is to be interfered with by his next superior officer as little as possible, those officers having only the power of supervision which their responsibility for training entails, and the right of interfering when the regulations are not being carried out. A Cabinet Order of 1858 says: "The necessary consequence of too early interference on the part of a superior is that the pleasure and pride that officers take in their duty are not only not increased but are actually ruined, that the necessary training in the assumption of individual responsibility is impossible, and that the superiors themselves fall into one-sidedness and narrowness of views, and, instead of preparing themselves for higher functions, continue to look upon duty from the point of view of their former lower rank. It is the duty of General Officers to do all they can to prevent this evil, and to make special mention of the display of any such interference in their qualification reports."

In the German Army the number of officers "on duty" is reduced to a minimum, as all officers have enough to do with the training of their men. In a regiment an officer is told off as officer of the day (*Offizier Kaserne du Jour*) for the twenty-four hours. He has the regimental guard under his orders, and is not allowed to leave barracks during his tour of duty. In case of fire, disorders, or other extraordinary events, he takes

all necessary measures pending the arrival of his superiors. The duties of this officer are, however, not laid down in any regulations, and it rests with the regimental commander whether such should be detailed or not. Usually an officer is only placed on duty when more than one regiment is in the same barracks, in other cases his duties are performed by the sergeant-major of the week. In large garrisons, one or more field officers or captains, in smaller garrisons lieutenants, are told off to visit all the guards by day and night, but one of the leading principles of duty in Germany is that guards and sentries should be reduced to the lowest possible number. In all Berlin there are only two officers' and fourteen other guards, besides regimental guards, and the total number of men composing them is about 330.

In large garrisons, the adjutants of all the regiments meet about noon at the Staff Office, and there the commandant or his Staff Officer gives out verbally the orders for the day, which are noted by the adjutants so far as their own regiment is concerned. Once a week, not only the adjutants, but all the Staff Officers and regimental commanders meet the commander of the garrison in full dress, and talk over service matters, or exchange ideas. Thus a good deal of correspondence is frequently saved.

On the orders being received by the adjutants they return to barracks and give them out, together with their own orders, to the sergeant-majors, and the under-officers on duty. Frequently also the battalion commander or commanders are present. The sergeant-majors then take measures to have the orders communicated to the officers of their companies. These meetings for giving out of orders (*Parole-Ausgabe*) invariably take place in the open air, and tunics are always worn.

The supernumerary field officer or thirteenth captain attached to a regimental staff is employed as the commanding officer sees fit. His usual duties are to train one-year volunteers, aspirant officers, and officers of the reserve, but he may not be placed in command of a company.

Adjutants are simply staff officers of their regimental or battalion commander, and keep all duty rosters. The regimental adjutant details officers for duty by name, men by battalions, and the battalion adjutant also details officers by name, and men by companies. The latter officer has also to instruct the under-officers in practical tactical exercises and inspect them on every parade as regards turn out. He has also to superintend the training of the drummers, fifers, and buglers, but this is the extent of the interference of an adjutant in drill matters.

The following authorities may give leave to the extent mentioned:—

An Army Corps Commander, to his Divisional, Brigade, and Regimental Commanders, up to $1\frac{1}{2}$ months, to other officers up to 3 months.

A Divisional Commander, to his Brigade Commanders, up to 7 days, to Regimental Commanders up to 1 month and to other officers up to 1½ months.

A Brigade Commander, to his Regimental Commanders, up to 7 days, to other officers, up to a month.

A Regimental Commander, to all his officers, up to 14 days.

A detached Field Officer, or Captain, in command, up to 7 days to all his officers.

Officers as a rule are only granted leave in spring, or after the manoeuvres, and the general rule is that, besides the commander, one officer must always be present for duty with each company, squadron, or battery. Sometimes officers are granted a year's leave without pay to travel abroad, and in this case they are seconded in their regiments, and may be absorbed on return into any other regiment.

Medical officers are bound to attend all officers of their regiment free of charge in their own homes. If, however, officers are admitted to hospital, they have to pay a daily rate of 1s. 6d. The only officers who can be thus admitted are subalterns and assistant-surgeons. If an officer is on the sick list for more than six months, a special report has to be made to the Sovereign for his instructions as to the officer's disposal.

Officer's messes have been universally introduced into the German Army. In the newer barracks, they are very fine and well-appointed suites of rooms, but by the regulations "Commanding Officers are bound to put a stop to any luxury which is not in keeping with military simplicity." In some garrisons (Strassburg, for instance) there is one large "Officers' Casino," in which all the regiments have their separate mess and ante-rooms, with common reading and recreation rooms. In the few cases in which the troops are billeted permanently upon the inhabitants, no officers' mess-house exists, but in such a case one or two rooms are hired for the purpose in a hotel. When a mess exists, all unmarried officers are bound to dine at it, or at least to pay for their dinner. The table money granted to officers (Chapter IV) is paid into the mess, and every care is taken to so regulate the price of messing and wines that the poorest officer finds it within his means to live comfortably at his mess.

CHAPTER II.

NON-COMMISSIONED OFFICERS, THEIR APPOINTMENT, PROMOTION, AND DUTIES.

IN the German Army, non-commissioned officers are divided into two broad classes, those who wear an officer's sword-knot and those who do not. To the former class belong:—

- (a.) Chief artificers (*Ober-Feuerwerker*).
Sergeant-Majors (*Feldwebel* in the infantry, artillery, and pioneers, &c., *Wachtmeister* in the cavalry).
Vice-Sergeant-Majors (*Vize-Feldwebel*, or *Vize-Wachtmeister*).
Sergeants (*Sergeanten*) detailed as Company Quartermasters (*Verwalter*) in Cadet Schools who have been specially allowed to wear officers' sword-knots.
- (b.) Ensigns (*Portepée-Führer*).
- (c.) Engineer Staff-Sergeants of Fortifications (*Wallmeister*), Staff-Sergeants of the Ordnance Corps (*Zeug-Feldwebel*), Staff-Sergeants of Artillery Technical Establishments (*Obermeister*).
- (d.) Mounted *Feld-Jäger* (Couriers).
- (e.) Veterinary Surgeons (*Roschärzte*).
- (f.) Band-Sergeants (*Stabschauboisten*), Bugle-Majors (*Stabschornisten*), and Trumpet-Majors (*Stabs-trompeter*).
- (g.) Gendarmes who, before entering the Gendarmerie, had the right to wear the officer's sword-knot.

The non-commissioned officers who have not the right to wear the officer's sword-knot, are:—

- (a.) Artificers (*Feuerwerker*).
- (b.) Sergeants (*Sergeanten*).
- (c.) Under officers (*Unteroffiziere*, called *Oberjäger* in the rifles).
- (d.) Gendarmes.
- (e.) Regimental or battalion drum-majors (*Regiments or Bataillons-Tambour*), the kettle-drummer (*Pauker*) of the Gardes du Corps Regiment, trumpeters (*Trompeter*), infantry bandsmen (*Hauboisten*) and bugle bandsmen of the rifles (*Wald-Hornisten*) of the established strength, also those of the latter three classes supernumerary to the establishment when the rank has been specially granted to them.
- (f.) Sergeants of the Ordnance Corps (*Zeug-Sergeanten*).
- (g.) Assistant Veterinary Surgeons (*Unter-Roschärzte*) and farriers (*Fahnnenschmiede*).
- (h.) Head military bakers (*Militär-Ober-Bäcker*).

- (i.) Senior hospital assistants and hospital assistants (*Lazareth-Gehülfen*).
- (j.) Students at the Military Veterinary School who have been under-officers in the army.

Lance-Corporals (*Gefreite*) and bombardiers of the artillery (*Ober-Gefreite*) are not classed as non-commissioned officers.

The above list shows the hierarchy of the non-commissioned officers, those standing higher on it being senior (*Höher im Range*) to those below them, and all those wearing the officers' sword-knot being the superiors of those without it, and being entitled to the salute from them. In the same manner, those without the sword-knot are entitled to a salute from all private soldiers.

Lance-corporals are chosen from among men of good character who have completed their course of instruction, and who have served at least six months. They are appointed by the Commander of the regiment on the recommendation of officers commanding companies, &c., and their appointment is put in orders. One-year volunteers may be made lance-corporals, if their instruction is sufficiently advanced, after six months' service. Bombardiers in the artillery, of whom there are four per battery, are generally selected from the three-year volunteers, and the majority of the under-officers of the artillery are selected from among them. Both bombardiers and acting bombardiers of the artillery must have passed through the *Abtheilung* School before being appointed, the courses of which begin after the manoeuvres and last till the 30th April, each battery sending four men to it. A bombardier may be appointed as such after a year's service.

A. NON-COMMISSIONED OFFICERS WITHOUT THE OFFICERS' SWORD-KNOT.

Every lance-corporal or private of good character who has a thorough knowledge of his work and who can read, write, and count, may be appointed an under-officer if he has served three years and re-engages. If a sufficiency of those men are not available to fill vacancies, men who do not re-engage may be made under-officers after three, or even after two years' service, but in this case they only receive the pay of a lance-corporal who has re-engaged. Candidates for the rank of under-officer are proposed by their company, &c., commander, and appointed by the regimental commander. Usually, they have to pass a slight test examination.

To complete the instruction of under-officers or re-engaged men, there is established in every infantry or cavalry regiment, or detached battalion, a school called *Kapitulanten-Schule* (school for re-engaged men). In these, the course of instruction is divided into two degrees. The first degree course is meant to give the requisite amount of general education to all re-engaged men; that of the second degree is to complete

the military instruction of the under-officers and render them capable of filling the higher military grades and posts in the civil service. Each course is divided into several classes of not more than twenty-five men each, the men being grouped as far as possible according to their previous attainments. The courses begin every year in the middle of October at the latest, and close about the end of April. The men attending them are not completely withdrawn from duty, and the hours are fixed by commanding officers. Instruction in elementary educational branches is generally given by paid civilian masters, that in military matters is given by sergeant-majors or officers, by the latter invariably in the case of geography and history. Every man who re-engages is examined in the subjects taught in the first degree course, and if he does not satisfy the examiners, he is put through the course, the subjects of which are reading, writing, arithmetic up to decimal fractions, geography, and German history from the times of the Great Elector. An examination is held at the end of the course, and those who fail to pass it are put through a second course. Attendance at the second degree course is voluntary and is confined to non-commissioned officers. As a rule, under officers must have at least six years' service before undergoing this course, and it lasts a year at least, the men attending it continuing throughout to perform their regular duty. The subjects of instruction are German grammar, military correspondence, arithmetic up to simple interest, mensuration, geography and map-reading, German history in general up to the times of the Great Elector, in detail from that epoch, and drawing. Certificates are given to those who pass through this course, or who pass the final examination without going through the course.

In the artillery, the schools corresponding to the above are termed Regimental Schools (*Regiments-Schulen*), and are formed at the headquarters of every regiment. The number of men attending each may not exceed 25 to 30 in a field, and 40 in a foot artillery regiment, and they are chosen from the under-officers, or re-engaged men. They must have at least nine months' service, have attended one annual practice, and be acquainted with the four rules and elementary gunnery, besides being able to read fluently and write legibly. Each school is under the second Field Officer of the regiment (*Etatmäßiger Stabsoffizier*). The course begins on the 1st October of each year and lasts till the 30th April following, the subjects of instruction being theory of artillery (as far as is necessary for under-officers), arithmetic and elementary geometry, writing and drawing up reports, military law and duties, geography, history of Germany, geometrical drawing, and elementary veterinary science (for field artillery only). The number of hours of instruction a week is 29. Officers or non-commissioned officers are the instructors, but officers of the Ordnance Corps may be entrusted with part of the instruction in artillery, and Veterinary Surgeons with that in veterinary science.

Practical instruction in gymnastics, gun and foot drill, and in cases of disabled ordnance forms part of the course, but this part may either be given to the pupils as a body, or they may be drilled in their own batteries as may be determined by the Commanding Officer.

A certain number of under-officers are received by the infantry, artillery, and pioneers every year from the under-officers' schools (see Chapter III). They enter their regiments either as under-officers, as lance-corporals, or as privates, but the last two categories are generally promoted to be under-officers within the year. They engage to serve four years in the army. After the reserve men are sent to their homes a certain number of vacancies are allowed to occur in the establishment of under-officers to provide places for the pupils from those schools.

The establishments of the various bodies of under officers in special employments are filled up as follows :—

Artificers of the second class. The best pupils of the artillery regimental schools are sent to the Artificers' School in Berlin (see Chapter III.) on completing two years' service and re-engaging for a further period of $4\frac{1}{2}$ years. The course lasts 20 months for men of the foot and $20\frac{1}{2}$ for those of field artillery, and the men are then given a certificate on passing their examination and sent back to their corps as artificers of the second class.

Drum-majors. These are selected by the Commanding Officer either from his own re-engaged drummers or from men specially engaged as drum-majors, and are given the rank of under-officer.

Clerks (Schreiber). Each regiment or battalion has an under-officer as clerk to the Adjutant. These are chosen from the under-officers and are exempt from all other duties. Each divisional staff has two such clerks, but these are only detailed for this duty for one year at a time. Each cavalry or artillery brigade office has usually one, and each infantry brigade office two such clerks.

Farriers. Each squadron of cavalry, battery of horse artillery, *Abtheilung* of field artillery, or battalion of train has one farrier, whose duties are to superintend the shoeing of the horses. These men are recruited by regiments &c., sending men with at least six months' service, who have previously exercised the trade of farrier, and who can read and write, to one of the farriers' schools (see Chapter III). Those who pass the examinations return as lance-corporals to their corps and as vacancies arise are promoted to farrier, who ranks as an under-officer. Such men must re-engage.

Assistant Veterinary Surgeons. To be proposed for this appointment, men must have sufficient education, be of good conduct, be by trade farriers, have at least one year's service, and not be more than 24 years of age on the 12th November of the year of their admission to the Veterinary School. They

first go through a course at the Farriers' School in Berlin, then return to their corps for duty and join the Veterinary School (see Chapter III) in the October following. On quitting this school with success, they are appointed Assistant Veterinary Surgeons.

Aspirant Paymasters. Men who desire to become Paymasters are chosen from among the under officers. They must be of irreproachable character, of orderly disposition, and have served at least two years. They are trained first in the Paymaster's office and in that of the clothing committee of their battalion, and if their progress is satisfactory they undergo a further nine months' training in the intendance office of a corps or division, after which they pass an examination in their duties. They are then promoted to sergeant, placed on a list kept by Army Corps, and are appointed Paymasters as vacancies occur. On receiving the latter appointment, they pass into the category of military officials.

The rank of sergeant is only given to under-officers actually doing duty with their corps or detached from it to go through a course. It is given by seniority in the regiment in the cavalry and in the company or battery in the other arms, although transfers may be made from one company to another to equalize promotion. No special functions are attributed to the rank of sergeant, but he is generally charged with the supervision of several squads, under the officers. Under-officers in special regimental employment may also receive the rank of sergeant, generally by seniority. Thus 2nd class artificers become 1st class artificers, hospital assistants become senior hospital assistants, farriers become farrier-majors (*Ober-Fahnen-schmiede*) &c. Bandsmen or trumpeters of the fixed establishment may be given the rank of sergeant, but do not receive any extra pay, while drum-majors may be given the rank with the extra pay. The sergeants of the Ordnance Corps are recruited from among under-officers of the artillery who have undergone a five months' course in an artillery depôt, which may be prolonged to eight if necessary. They are then appointed ordnance sergeants by the War Minister.

B. NON-COMMISSIONED OFFICERS WITH THE OFFICERS' SWORD-KNOT.

Passing now to the higher class of non-commissioned officers who wear an officer's sword-knot, and whose position has some analogy to that of our warrant officers, it comprises three grades, viz.: Vice-Sergeant-Major, Ensign, and Sergeant-Major, the latter being the higher rank.

Vice-Sergeant-Majors are promoted by seniority from among the sergeants actually doing duty with their company, squadron, or battery. They are appointed by the Regimental Commander and receive a warrant. Drum-majors, clerks of the fixed

establishment, draughtsmen of the engineer services, hospital quartermasters, under-officers attached to the Body Guard Gendarmerie, sergeant storekeepers in the train depôts, and staff sergeants of the military works may be given the rank of Vice-Sergeant-Major after 15 years' service, but they receive no extra pay on this account. The following non-commissioned officers in special employment have also the rank of Vice-Sergeant-Majors:—

Vice-Chief-Artificers. 1st class artificers are given this rank by seniority.

Assistant Veterinary Surgeons, who are given the rank of vice-sergeant-major on passing their final examinations but rank junior to all others of this rank in their corps.

Depôt Vice-Sergeant-Majors. To this rank sergeants of the Ordnance Corps are promoted after 15 years' service, but they receive no extra pay in consequence.

Under officers of the Palace Guard Company may be given the rank of Vice-Sergeant-Major after 15 years' service.

Ensigns are quite a separate class from the other non-commissioned officers and are one and all candidates for commissions. It appears better therefore to consider their appointment and promotion along with those of officers.

Sergeant-Majors are selected without regard to seniority from all the under-officers, sergeants, and vice-sergeant-majors of a regiment or independent battalion. They are appointed by the commander of the regiment or battalion. The following specially employed non-commissioned officers have the rank of Sergeant-Major:—

Chief Artificers named by seniority.

Band sergeants selected from the most capable men of each band and appointed by the commander of the regiment, in the Guard by the Emperor. Bandmasters (*Kapellmeister*) are in much the same position as those of the British service.

Aspirant Paymasters—after eight years' service.

Staff-Sergeants of the Ordnance Corps. These are recruited directly from under-officers of artillery who have passed the examinations for Head Artificers or Paymaster. They must be free from debt and of irreproachable character, not more than 26 years of age, and unmarried. They must engage to serve five years, and then undergo a course similar to that of sergeants of the Ordnance Corps, after which they receive their appointments.

Veterinary Surgeons. Assistant Veterinary Surgeons who receive "very good" at their final examination may be proposed for this rank after six months' service, those receiving "good" after one, and those with "sufficient" after two years' service.

Engineer Staff-Sergeants of Fortifications are recruited from under officers of the pioneers who have served at least nine years, five of which as under-officer or lance-corporal, and who pass a special examination in German, mathematics, mechanics, fortification, and drawing.

Mounted Feld-Jägers. These are eventually promoted to be officers, but on first appointment from the non-commissioned ranks of the army they are given the rank of Sergeant-Major.

C. NON-COMMISSIONED OFFICERS OF THE RESERVE AND LANDWEHR.

For the infantry and cavalry, the General Officers Commanding Army Corps fix every year the number of men about to be sent to the reserve who are to be specially instructed as aspirant under-officers. In the other arms, this is done by the Inspectors-General. The number is fixed by the necessities of mobilisation. The men thus selected are borne on special lists in their Landwehr battalion districts, but the commanders of those districts can strike them off this list for misconduct.

When those aspirant under-officers are called out for training, they may be promoted to be under-officers of the reserve (or Landwehr) according to the rules in force in the active army, their appointments being made by the Brigade Commander or Inspector-General. If there are vacancies in the corps or in the temporary training formations, these promotions may be made at any time; if no vacancies exist, only at the end of the training.

No promotions to sergeant are made until the moment of mobilisation, but in peace the rank of vice-sergeant-major may be given to under-officers of the oldest class of the reserve or of the Landwehr whose social position is in accordance with this rank.

Men of the reserve and landwehr who have been called up for training in the medical or administrative branches and who are otherwise fit subjects may be appointed under-officers in the reserve of those services by the Landwehr battalion district commanders on the proposition of the Army Corps Intendant.

Lance-corporals and under-officers passing to the reserve retain their rank in it, and, if the number of the above categories does not suffice to bring the cadres up to the war footing, promotions are made from the ranks.

D. DUTIES OF NON-COMMISSIONED OFFICERS.

Lance-Corporals and Bombardiers.—They are the assistants to and substitutes of the under-officers in charge of squads, but in case of their having to take over charge of a squad their right to command is strictly limited to the men of their own squad. They are distributed as far as possible one to each room. They command small guards or are employed to march reliefs in larger guards. In every company, &c., one lance-corporal is

on duty as company, &c., orderly every day. He assists the under-officer of the day, warns under-officers for duty, and carries to them the orders of the sergeant-major. He shows the order book to the officers of the company and posts all company correspondence. He may not go to bed at night.

Under-Officers.—These are employed as heads of squads and are called, when so employed, *Korporalschafts-Führer* in the infantry, foot artillery, and pioneers, *Beritt-Unteroffizier* in the cavalry, and *Geschütz-Führer* in the field artillery. Their duties are the same as those of heads of rooms or squads in the British army. The "squads" thus formed have nothing to do with the tactical sub-divisions of the company, &c., on parade. In each company, &c., an under-officer is detailed for duty each day. He carries out the detail of duty under the Sergeant-Major of the Week, and sees that all the instructions of the company, &c., commander are carried out. He inspects the rooms, &c., of his company, wakes the men in the morning, takes the sick to hospital and prisoners to prison, calls the roll at night, and reports any men absent from roll-call. He is responsible for the distribution of rations and for all apparatus required for drill (gymnastic appliances, &c.) being ready. He parades all men for duty and reports all casualties to his sergeant-major.

Under-officers are also employed as store men in each company, squadron, or battery (*Kammer-Unteroffizier*, or *Kapitän-d'armes*, in the infantry, field and foot artillery, *Quartiermeister* in the cavalry and horse artillery). They have charge of all clothing, stores, and ammunition, and in the cavalry and artillery, of barracks, quarters, and rations. An under-officer is also attached to the staff of each regiment for the performance of those duties. Each company in the infantry has an under-officer as *Fourrier* (Quartermaster) who is in charge of barracks, quarters, and rations. In the cavalry and field artillery each squadron or battery has an under-officer as forage-master (*Futtermeister*), who receives daily from the squadron or battery forage store the forage for the day and distributes it. In the artillery he also superintends the stable duties. In the infantry, each company has an under-officer for musketry (*Schiess-Unteroffizier*) who looks after the repair of arms, the distribution of ammunition, and the range stores, and keeps the musketry reports.

All under-officers may remain out of barracks one hour after tattoo, but company, &c., Commanders may give permanent leave to them to be out of barracks at all hours when not required for duty. Those who live in barracks with the men may have their arms, &c., cleaned by men of their own squads without payment.

Sergeants.—These have identically the same duties as the under-officers, and are frequently employed as storemen, quartermaster (*Fourrier*), or foragemaster.

Vice-Sergeant-Majors.—These non-commissioned officers assist the officers in superintending the detail of duty and instruction

in their companies. They take charge of important guards which have no officer detailed for them, and take the place of the Sergeant-Major when he is absent. Vice-Sergeant-Majors are never placed in charge of squads or employed as storemen, quartermasters, or under-officers of the day.

Sergeant-Majors.—The Sergeant-Major is the senior non-commissioned officer of a company, squadron, or battery. He superintends the detail of duties, reports all casualties once in twenty-four hours to his commanding officer, and is pay-sergeant of the company, &c. He keeps all the company, &c., registers, except, in the infantry, the musketry reports. There are no battalion or regimental sergeant-majors in the German army. A sergeant-major has standing leave to be absent from barracks at all times when not on duty.

In each battalion, regiment of cavalry, or *Abtheilung* of artillery, a Sergeant-Major of the Week is detailed for duty. He superintends the duty generally, parades all fatigue parties, guards, or casualties, and in case of any extraordinary occurrence in barracks takes all necessary measures. He is allowed, of course, to go to bed at night, unlike the other non-commissioned officers on duty.

E. GENERAL NOTES ON THE POSITION, &c., OF NON-COM-MISSIONED OFFICERS.

In Germany it is recognised that, to retain a good body of non-commissioned officers, everything possible must be done to make them comfortable and contented in the service, respected by the civil population, and free from care as to their future after leaving the army. Mention has been made above of the relaxation of hours for return to barracks at night allowed to them, and in Chapter V the pensions and civil positions they have a right to on leaving the service are set forth. Under-officers living in barracks have always separate partitions in the barrack-rooms for their beds, and Sergeant-Majors and Vice-Sergeant-Majors are invariably given separate rooms and have special soldier servants. Married non-commissioned officers live out of barracks. In almost every barrack a mess has been arranged for unmarried under-officers and sergeant-majors. These comprise, where possible, dining room, billiard room, reading room, recreation room, and a bar where wine and beer are sold. An officer (generally a captain) is mess president, and is assisted by a committee of non-commissioned officers. The extra allowances of all the members are usually paid direct to the mess, and the daily rate of messing for ten days at a time is also deducted from their pay and paid into the mess. All extra articles purchased at the bar are usually paid for in cash. Dances are allowed to be given in those messes by the members.

F. ARMOURERS (BÜCHSENMACHER) AND SADDLERS (SATTLER).

These men are specially engaged for their respective positions, and are given warrants by the War Ministry. Each battalion of infantry, foot artillery, or pioneers, each regiment of cavalry, and each *Abtheilung* of field artillery has an armourer, and each cavalry regiment a saddler, who are in charge of their respective shops, and instruct the men of their corps in taking arms and saddlery to pieces and repairing them. They wear uniform when on duty and are bound to salute all officers, but are not given any relative military rank, and are counted as subordinate officials.

CHAPTER III.

MILITARY EDUCATIONAL AND TRAINING ESTABLISHMENTS.

THE care and attention bestowed in Germany upon the education of other classes of the community are also extended to the army in all its branches.

In the numerous minor educational establishments, the children of all soldiers serving with the colours are entitled to receive instruction, an arrangement which often acts as a great inducement for the older non-commissioned officers to continue in the service. Should there be no room in these establishments, soldiers' children are admitted to the town and village schools, the State defraying the expenses of their instruction.

The representative for military education at headquarters is the Inspector General of Military Education, who is assisted by the Supreme Board of Military Studies. Under his orders are the War Schools, the Artillery and Engineer School, and the Cadet Corps. The Under-Officers' Schools, the School of Musketry, and the Military Gymnastic School are under the Inspector of Infantry Schools. The War Academy is directly under the orders of the Chief of the General Staff.

The various educational and training establishments may be classed as follows :—

- A. Schools for soldiers' children.
- B. Schools for training non-commissioned officers.
- C. Institutions for the higher training of non-commissioned officers.
- D. Institutions for training officers.
- E. Institutions for the higher training of officers.
- F. Institutions for the training of medical officers and veterinary surgeons.
- G. Institutions for special training.

A. SCHOOLS FOR SOLDIERS' CHILDREN.

(a) *The Military Orphanage (Grosses Militair Waisenhaus).*

The great military orphanage at Potsdam for 760 boys, and its branch at Schloss Pretsch for 250 girls, must be regarded not only as educational establishments, but as charitable institutions for soldiers' children. The conditions of admission are that the father or both parents must be dead, that the father must have been in the Prussian army, either when the child was born, or at the time of his death, and that the child is between six and twelve years old and in good health. The boys may be either Protestants or Roman Catholics, the girls Protestants only, Roman Catholic girls being boarded out at the expense of the Institution. Preference is given to those in needy circumstances, and pecuniary aid may also be given out of the funds to those not admitted for want of vacancies. The children are required to leave when they have completed their fourteenth year. The boys generally join the under-officers' schools later on.

The orphanage is under the War Ministry, and at its head is a Colonel as Director, with two First Lieutenants as Assistants, and the necessary subordinate staff of civil teachers. The boys wear uniform and are instructed in military drill.

(b) *The Soldiers' Boys' Training Institute (Militair Knabens Erziehungs Institut).*

This institution, which is situated at Annaburg, 12 miles north-east of Torgau, is intended to receive 600 boys of the Protestant faith, sons of soldiers actually serving or pensioned from, or who have died while serving in, the German army, and educate them for the under-officers' preparatory schools. Catholic boys coming under the conditions of admission are sent to the orphanage of that persuasion at Erfurt. The boys must be between 10 and 12 years of age and in good health. They are bound, on entering, to engage to serve two years in the army for each year spent at the school, or, in default, to reimburse the cost of their education.

The Institute is divided into two branches, an infant's school and an under-officers' preparatory school, (see below). The pupils remain in the former until they are 14 years of age, and then pass into the latter, in which they remain three years, passing thence as candidates for the rank of under-officer into the army.

Both branches are under a Colonel as Director. The infants' school has a staff of two First and four Second Lieutenants, the under-officers' preparatory school a staff of a Captain in charge with two First Lieutenants as Company Commanders. The non-combatant staff consists of two Chaplains, a

Secretary and Treasurer, 2 Medical Officers, 2 Inspectors, Clerk, 17 Professors, and 7 fatigue men. Seventeen under-officers, 4 bandsmen, 4 tradesmen, 1 hospital assistant, and 1 aspirant paymaster of the army are attached to the school.

The organization of both schools is entirely military, the pupils wearing uniform, and those of the preparatory school being armed as infantry soldiers. Each pupil is taught a trade.

Saxony has a similar institution at Klein Struppen near Pirna.

B. SCHOOLS FOR TRAINING NON-COMMISSIONED OFFICERS.

In Chapter II have been described the schools formed each winter under regimental arrangements for the instruction of non-commissioned officers, and it only remains to consider here the separate establishments for this purpose.

(a.) *The Under-Officers' Preparatory School (Unter-Offizier Vorschule).**

The object of this school, which is established at Weilburg (on the Lahn near Wiesbaden) is to give a good general and military education to boys desiring to subsequently enter the under-officers' schools. It is under the Inspector of Infantry Schools, and is commanded by a Field Officer. The pupils, 250 in number, are divided into two companies, commanded by 1 Captain, 1 First Lieutenant (seconded), and 5 Second Lieutenants (not seconded). A Medical Officer and an official as Secretary and Treasurer are also attached, besides the requisite staff of non-commissioned officers and civilian teachers.

Candidates for admission must be between 15 and 16 years of age, and be of good conduct and constitution. They must be able to read and write correctly and know the first four rules of arithmetic. Each must produce the written consent of his parents or guardians, and engage to enter an under-officers' school, and serve two years in the army for each year passed at the preparatory school. If he subsequently declines to carry out those engagements, he is bound to repay 23*l.* 5*s.* per year spent at the school. The pupils are clothed, fed, and instructed at the expense of the State. They wear uniform, but are not soldiers. They are bound to salute all non-commissioned and commissioned officers, and the punishments which may be inflicted on them are regulated by a special code.

The course of instruction lasts two years, and comprises German, arithmetic, geography, physics, writing, drawing, history, and singing. Instruction in history, geography, and drawing, is given by the officers, that in other branches by civilian teachers. The pupils are drilled as a half battalion, and special attention is paid to gymnastics, bayonet fighting, and swimming.

* Funds for the creation of a second school of this description at Neu-Breisach in Alsace have been voted, and the school is to be opened in October, 1888.

The yearly course begins on the 1st October, and at the termination of their two years the pupils generally join the Weissenfels or Jülich Under-Officers' School. On entering the latter, they have to engage to fulfil all the conditions attached to entry, in addition to those contracted on entering the preparatory school.

To the Soldiers' Boys Training Institute at Annaburg is also attached an under-officers' preparatory school, organized in a similar manner to that at Weilburg and conducted on the same principles, but only containing 125 pupils. It only receives boys from the Training Institute.

(b.) *The Under-Officers' Schools (Unteroffizier Schulen).*

There are six of these schools in Prussia and the states administered by the Prussian War Ministry, at Potsdam, Jülich, Biebrich, Weissenfels, Ettlingen, and Marienwerder, and one in Saxony at Marienberg. Bavaria has none as yet, and Württemberg maintains 60 pupils at the Schools of Biebrich and Ettlingen.

Each of these schools has a military organization, and is commanded by a field officer, with a lieutenant as adjutant, and a medical officer and a paymaster attached. The schools of Jülich and Marienberg have each only two, the others four companies each. The companies are commanded by captains, who, like the commandants of the schools, are seconded in their regiments, and the schools with four companies have each thirteen (those with two only, six) lieutenants attached for three years as company officers and not seconded in their regiments. These officers must have at least three years' service, and their period on command at the schools may be extended beyond three years. A four-company school has a permanent subordinate staff of 4 sergeant-majors, 38 sergeants, 1 aspirant-paymaster, 1 drum-major, 8 buglers, 8 drummers, 24 artificers and tradesmen, 4 hospital assistants, and 1 armourer. A two-company school has a staff of about half this strength. Four sergeants in each school are borne on the strength of regiments, and are on command for one year, but the 38 given above are permanently attached and must have served at least two years as under-officer in an infantry regiment before joining the school. The number of pupils in a four-company school is 576.

These schools, except those of Weissenfels and Jülich, which are supplied by the under-officers' preparatory school, are recruited by the voluntary enlistment of young men between seventeen and twenty years of age, who engage to serve in the army for four years after they leave the schools. They must be at least 5 feet 1½ inches in height, and of strong constitution and good eyesight. The total number of pupils in these schools is 3,136 in Prussia, and 200 in Saxony. The pupils are called Fusiliers, and are subject to military law as soldiers. The best of them (60 in each four-company school) may be promoted in their second or third year to lance-corporal.

The course of instruction lasts three years, but for exceptionally promising men it may be reduced to two. It comprises reading, writing, arithmetic, German, drawing up reports, military accounts, history, geography, military sketching, and singing. Practical exercises, such as drill, gymnastics, bayonet fighting, and swimming, naturally form part of the course, and lectures on military duties, the organization of the army, and military law, are also given. The Potsdam school takes over the guard duties at Potsdam during the grand manoeuvres; and during the autumn it takes part in the drills and exercises of the infantry of the garrison. The hours of work are usually from 8 A.M. to 12 noon, from 2 to 4 P.M., and from 5 to 6 or 7 P.M.

On leaving the school, the pupils are posted to regiments of infantry or artillery, the best as under-officers (for whom a certain number of places are annually reserved), the remainder as lance-corporals or privates. These last are, however, generally promoted to be under-officers within a year. Usually, these men being of good education are eventually employed as clerks, store-keepers, quartermasters, or paymasters, and, if well conducted, they are generally sought after as sergeant-majors.

C. INSTITUTIONS FOR THE HIGHER TRAINING OF NON-COMMISSIONED OFFICERS.

(a.) *The Chief-Artificers' School at Berlin (Oberfeuerwerker-Schule).*

The object of this school is to train intelligent non-commissioned officers of artillery of the Prussian, Saxon, and Württemberg contingents in laboratory work, with a view to their becoming artificers (*Feuerwerker*), and eventually rising to be artificer-officers. These latter officers are in charge of the laboratories at artillery depôts in time of peace, and in war are attached to the siege park.

The school is under a field officer as director, with a captain as sub-director and professor, and five lieutenants and ten artificer-lieutenants as instructors. All the combatant officers belong to the artillery, and the lieutenants are only attached and not seconded in their regiments. A captain-artificer of the Imperial Navy, and a paymaster are also attached to the school.

The school is recruited from the best pupils of the artillery regimental schools (see Chapter II), who have served already two years, and who engage to serve $4\frac{1}{2}$ years from the date of their entry into the school. A preliminary examination in German, artillery, and mathematics, has to be passed; and if successful in this, the candidate joins the school, and, if not an

under-officer, is promoted on the first vacancy in that rank occurring in his regiment. The number of students is 240, including 10 to 20 of the Naval Artillery.

The course lasts 20 months for students from the foot, and 20½ months for those from the field artillery. It begins on the 15th August for the latter, and 1st September for the former, in each year, and is divided into three periods. The subjects of instruction are the construction, receipt, inspection, storing, &c., of artillery material and warlike stores, gunnery, composition and duties of ammunition columns, fortifications (principally siege works), mathematics (algebra up to equations of the second degree, plane trigonometry, and plane geometry), military topography (for selected men), physics, chemistry, German, and drawing. The practical exercises are work in the laboratory, inspection of artillery material, packing ammunition, and field sketching.

An examination is held at the end of each period, and if the results are satisfactory the candidates are appointed artificers, their seniority being determined by the result of the final examination.

(b.) *The Chief-Artificers' School at Munich.*

This school is organized on the model of the Prussian School and is in charge of a major as Director, assisted by a lieutenant.

(c.) *The School of Military Telegraphy (at Berlin) (Militär-Telegraphen-Schule).*

To this establishment under-officers of the pioneers are sent for courses of eight to ten weeks, which may be lengthened to four months, and lance-corporals and privates for six months, to learn the practice of telegraphy. The former must have one, the latter two years still to serve. The courses take place in winter, and the men thus trained form a nucleus for the telegraphic detachments to be formed on mobilization. A major is in charge, assisted by a captain with four first lieutenants as instructors, all engineer officers.

(d.) *The School of Fortification Construction (Festungs-Bau-Schule).*

This school was instituted in 1886 for the training of non-commissioned officers of pioneers for duty under the engineer department in connection with the construction of works of fortification. It is organized on the same lines as the Chief-Artificers' School, and the military staff consists of a major in charge assisted by a captain and a first lieutenant as instructors. The course lasts two years. Civil professors are also employed.

D. INSTITUTIONS FOR TRAINING OFFICERS.

(a.) *The Prussian Cadet Corps (Das Cadetten Corps).*

The object of the Cadet Corps is to impart instruction and training to the sons, not only of officers, but of all classes of the community, with a view to their entering the military service. The corps is under the command of a Colonel, who has a Captain and a First Lieutenant as Adjutants, and the cadets are divided among the Central Cadet Institution (*Haupt-Cadetten-Anstalt*), at Gross-Lichterfelde, near Berlin, and six Cadet Houses (*Cadetten-Haus*) at Kulm, Potsdam, Wahlstatt, Bensberg, Ploen, and Oranienstein, the latter houses being preparatory training institutions for the Central Institution.

The conditions of admission are as follows. There are three categories of cadets, viz. :—

1st. Royal cadets, who are received either gratuitously, or on payment of an annual board of from 4*l.* 10*s.* to 22*l.* 10*s.*

2nd. Boarding cadets, who are received up to the number of vacancies available, after all the Royal cadets have been taken in. They pay a board of 37*l.* a year.

3rd. Out-door cadets, who pay an annual fee of 3*l.*

Foreigners may be admitted, if no harm is thereby done to the interests of Prussians. They pay 54*l.* per annum.

Royal cadetships may be given to the sons of officers killed in action, died of wounds, or invalided on account of active service, of those who have died while serving, of those actually serving in the army, navy, or gendarmerie, of those on the pensioned list, of those who have died after retiring from the army, provided they have served through one campaign, and finally to the sons of those persons holding the relative rank of officer. The order in which preference is given is that of the above list. The sons of non-commissioned officers who have been killed in action, or who receive a pension for wounds, or who have served honourably for twenty-five years, and those of civilians who have done good service to the State may also receive Royal cadetships. Claims to admission as Royal cadets are settled by a Committee at Berlin, composed of the Inspector-General of Military Education, delegates from the Ministries of War and Religion, the Commander of the Cadet Corps, and the Commandant of the Central Cadet Institution. Candidates must be between ten and fifteen years of age.

Applications to enter the Cadet Corps as boarding cadets are decided upon by the Commander of the Cadet Corps. All legitimate children of Prussian subjects are eligible for admission. Out-door cadets may be permitted by the Commander of the Cadet Corps to attend the course of any cadet house, provided accomodation is available. They must be between ten and fourteen years of age.

Admission to the corps takes place once a year, on the 1st May. All candidates must be between the ages of ten and

fifteen; they have to undergo a medical inspection, and pass an examination of graduated difficulty according to age, to test whether the candidate is sufficiently educated to take his place in the class corresponding to his age.

The course of instruction is that of "*Real*" schools of the 1st class, the course of the preparatory schools comprising the sixth, fifth, fourth, third, and upper third classes, and that of the Central Institution, to which cadets are transferred on completing the course at the cadet houses, the second, upper second, first, upper first, and a special class, called the "*Selecta*." The subjects taught at the preparatory cadet houses are Bible history, Latin, German, French, arithmetic, elementary algebra and geometry, ancient and modern history, rudiments of natural philosophy, drawing, and writing. Besides these, the cadets receive instruction in drill, gymnastics, bayonet exercise, and dancing. The course in the Central Institution, which lasts about two and a-half years, embraces in addition to the higher branches of the lower course, tactics, fortification, science of arms, surveying, plan drawing, mathematics, riding, and English or Greek. The procedure by which cadets are appointed to the army is explained in Chapter I.

The six cadet houses have accommodation as follows* :—Kulm, 180 cadets; Potsdam, 240; Wahlstatt, 220; Bensberg, 220; Ploen, 148; and Oranienstein, 200. Each is commanded by a field officer, with two captains as company commanders, who are responsible for discipline. Each has two military professors, and there are also attached to each one first lieutenant, as assistant to the company commanders, two medical officers, a chaplain, a secretary and treasurer, and six to twelve infantry officers (not seconded in their regiments) as instructors.

The Central Cadet Institution contains 880 cadets, divided into two battalions of four companies each. The Staff comprises 1 field officer as commandant; 3 field officers (2 as battalion commanders, 1 for administrative duties); 8 captains, as company commanders; 8 first lieutenants, as company officers, and 1 as adjutant; 17 military professors, of whom 14 are captains; 10 first and 7 second lieutenants, as superintendents of discipline and instructors; 3 medical officers; 1 protestant and 1 catholic chaplain; and 1 secretary and treasurer. There are 29 civil professors, and the subordinate staff comprises 4 sergeant-major lieutenants, as inspectors of barracks, 8 sergeants, as company stewards, 1 librarian, 1 cashier, 2 clerks, 18 bandmen, 16 drummers, and a numerous *personnel* of servants, waiters, &c., &c. The senior cadets are appointed lance-corporals, under-officers, or sword-knot under officers, and assist the officers in maintaining discipline.

* It is proposed to form a new cadet house with 180 cadets in 1891 at Karlsruhe and to increase the number of cadets by 2 at Ploen, by 40 at Kulm, and by 80 at Lichterfelde in 1888-9. The Potsdam house will be decreased by 20 cadets in 1890-1. The superintendents of instruction at Lichterfelde are to be augmented by 8 and the civil professors by 5 in 1888-9.

The cadets from Lichterfelde are all appointed to the Prussian or Württemberg contingents. In the year 1887 the total number of appointments to the Prussian army was 237, and to the Württemberg Army 11, divided as follows:—

PRUSSIAN ARMY.					
	Infantry.	Cavalry.	Field Art.	Foot Art.	Pioneers.
As Second Lieutenants	59	10	11	1	1
As Ensigns	137	15	1	—	2

WÜRTTEMBERG ARMY.					
As Second Lieutenants	3	1	—	—	—
As Ensigns	6	—	1	—	—

(b.) *The Saxon Cadet Corps.*

The Saxon Cadet Corps is accommodated in fine new buildings on the Dresdener Haide, near Dresden, and contains 180 cadets of from 12 to 19 years of age, formed into two companies. The conditions of admission are the same as in the Prussian corps, the number of Royal cadets being fixed at 60, who pay a yearly board of from 4*l.* 10*s.* to 15*l.* The course lasts five years, is divided into six classes, and comprises the same subjects as in Prussia. The cadets are all posted, on appointment to the army, to the 12th (Royal Saxon) Corps. The corps is commanded by a major-general, with 2 captains as company commanders, 6 captains or lieutenants as company officers and instructors, 4 sergeant-major lieutenants as stewards, 1 treasurer, 1 assistant treasurer, 1 military and 11 civil professors, 1 medical officer, and 13 subordinate employés.

In 1887 the Saxon Cadet Corps furnished 23 Ensigns to the 12th Army Corps, of whom 15 joined the infantry, 4 the cavalry and 4 the field artillery. Three Saxon cadets were also placed as Ensigns in the Prussian army.

(c.) *The Bavarian Cadet Corps.*

The Bavarian Cadet Corps is established at Munich, and consists of 180 Cadets, of whom 35 are admitted free, 45 pay 11*l.* 5*s.* per annum, 25, 22*l.* 10*s.*, 25, 33*l.* 15*s.*, and 50 pay 45*l.* The conditions of admission are much the same as in Prussia, as is also the course of study. There are six classes, and candidates are admitted to the lowest at from 12 to 13 years of age, and to the second at from 13 to 14. The annual courses begin on the 1st October, and the school closes on the 8th August.

The corps is commanded by a major-general, with a major as assistant, 12 captains and first and second lieutenants, as instructors and superintendents of discipline, 5 civil professors, 5 civil instructors, and a subordinate *personnel* of 26 men. The senior cadets are called Colour Cadets (*Fahnen-Kadetten*), and aid in the maintenance of discipline.

In 1887, the Corps furnished 25 Ensigns to the army, of

whom 20 to the infantry, 4 to the field artillery, and 1 to the foot artillery.

(d.) *The War Schools (Die Kriegs-Schulen).*

The object of the war schools is to afford instruction in the science of war to Ensigns preparing for their officer's examination (see Chapter I). There are nine such schools, eight in Prussia for the Prussian, Saxon, and Württemberg armies, and one in Bavaria for the Bavarian army, situated at Potsdam (for 100 students), Anclam (96), Glogau (100), Neisse (107), Hanover (93), Cassel (80), Engers (100), Metz (120), and Munich (70). The Prussian schools are under an Inspector of War Schools (a lieutenant-general, who has a captain as aide-de-camp), who is under the Inspector General of Military Education. Each school is under a field officer as director, who is assisted by a first lieutenant as secretary and librarian, and by a paymaster. A medical officer is attached if no troops are quartered in the garrison. The instructional staff consists of eight (12 at Metz) captains or first lieutenants as instructors in tactics, administration, artillery and small arms, fortifications, and military topography, who are seconded in their regiments, and six (eight at Metz) first and second lieutenants (two always belonging to the cavalry) attached, without being seconded, to maintain discipline and instruct in riding, fencing, gymnastics, drill, and musketry. One of these officers should have passed through the Military Gymnastic School and another through the School of Musketry. The subordinate *personnel* is composed of demi-invalids or men attached from regiments, and horses are furnished by cavalry regiments. The directors and instructors are seconded for at least three and at most five years, and those who instruct in tactics, administration, and military topography must have passed through the War Academy. The attached officers must be unmarried and must not be within four years of their promotion to Captain. The men attached must be in their second or third year of service.

The students live in barracks and dine always together. They may wear private articles of uniform (of finer cloth and cut) when off duty, but on duty must wear their regimental clothing. They are divided into classes of 30 each at the outside, the students being grouped according to their abilities.

The courses commence on the 1st March at Potsdam, Hanover, and Cassel, and last nine months, at the others they begin on the 1st October and last ten months. The subjects of instruction comprise tactics, artillery (including manufacture of ordnance, carriages and ammunition), theory of artillery and musketry, small arms, field and permanent fortification, and attack and defence of fortified positions, military topography, army organization and administration, and military correspondence. The practical course comprises tactical exercises on broken ground, visits to the artillery ranges, to the technical establishments, to the engineer drill grounds, and to fortresses,

exercises in making up infantry ammunition, gun drill, riding, gymnastics, and musketry.

The method of conducting the final (officer's) examinations is detailed in Chapter I.

E INSTITUTIONS FOR THE HIGHER TRAINING OF OFFICERS.

(a.) *The United Artillery and Engineer School (Die Vereinigte Artillerie und Ingenieur Schule).*

The object of this institution is to impart instruction to lieutenants of artillery and engineers of the Prussian, Saxon, and Württemberg contingents in the theory and practice of their profession. It is situated in the western suburbs of Berlin near the "Zoologischer Garten" railway station, and is under the supervision of the Inspectors-General of Field and Foot Artillery and Engineers, who report from time to time as to the progress of the establishment to the Inspector-General of Military Education, but in other respects regulate the general course of study at the school. In administrative matters, the school is directly under the War Minister.

At the nominal head of the school are two General Officers of high rank as "Curators." A Lieutenant-General as inspector superintends the carrying out of all regulations, and is assisted by a Board of Directors, at the head of which is a colonel with a major as assistant, and four first lieutenants as directors. These officers are responsible for the discipline and administration of the school. The Committee of Studies consists of a colonel as president, who is also president of the Board of Directors, nine majors or captains as members, and a first lieutenant as secretary. It directs the course of instruction and pronounces on the abilities of the students, and all its officers hold other appointments in addition. Thirteen officers, only six of whom are seconded, are employed as instructors, of whom the senior instructor in mathematics and artillery and the instructor of the second years' technical course for engineer officers are *ex officio* members of the Committee of Studies.

Lieutenants of artillery and engineers are at first appointed as supernumeraries (see Chapter I), and have to serve one year and nine months with their regiments or battalions before joining the school. The officers who have to follow the course in each year are detailed by the Inspectors of Artillery and Engineers, the Saxon and Württemberg War Ministers being consulted for officers of their own contingents, and their number is determined by the necessities of the service and the accommodation available. The number of officer students at present in the school is about 120 of the field and 70 of the foot artillery, and 30 of the engineers. The students live in their private quarters in town, but dine at mess in the school unless they live with relations in Berlin or belong to the Artillery of the Guard.

The course for artillery officers lasts $9\frac{1}{2}$ months, from the 1st October to the middle of the following July, and is followed by a professional examination (*Berufsprüfung*). Officers failing to pass may be recommended for a second year's course or may be allowed to present themselves a second time for examination without going through the course. Those who pass are confirmed as Second Lieutenants, their commissions being dated from the day of their first appointment as officer. A certain number of the best are selected each year by the Inspector-General of Artillery to go through a second course of eight months (from 1st October to 1st June) called the "*Selecta*." These officers become thus qualified for various artillery appointments. Officers failing at the examination at the end of this course are not allowed a second trial.

The course for engineer officers is divided into two courses, a lower and a higher. The lower lasts 11 months, of which $1\frac{1}{2}$ are devoted to practical exercises. At the end of it, the professional examination is passed and successful and unsuccessful candidates treated as in the artillery. The higher course lasts $9\frac{1}{2}$ months and begins a month after the close of the lower. At the end of it a final examination is passed. Those who fail are permitted to spend a third year at the school or present themselves for examination at the end of another year, but no officer can be promoted to First Lieutenant if he has not passed this examination.

The hours of study are usually from 8 A.M. till 2 P.M., the afternoons being devoted to practical exercises. The following tables show the nature of the various courses* :—

* These tables are those given by Buschbeck-Helldorff in 1881, but since then the length of the courses has been reduced.

THEORETICAL COURSE.

Subjects.	Number of Lectures per Week.					
	Field Artillery.		Foot Artillery.		Engineers.	
	First Year.	"Selecta."	First Year.	"Selecta."	Lower Course.	Higher Course.
Ballistics	2	3	2	3	—	—
Artillery material ..	3	—	3	—	—	—
Artillery	—	—	—	—	3	—
Foreign artilleries ..	—	1	—	1	—	—
Construction of ordnance	—	3	—	3	—	—
Field fortification and siege warfare	2	—	—	—	—	—
Fortification	—	—	4	—	4	—
Engineering science ..	—	—	—	—	5	5
Siege warfare	—	—	4	—	—	2
Canal, &c., construction	—	—	—	—	—	2
Tactics	4	—	2	—	—	2
History of field operations	—	4	—	—	—	—
History of siege operations	—	—	—	4	—	—
Mathematics	7	8	7	8	6	6
Physics	3	3	3	3	2	2
Chemistry	2	4	2	4	—	4
Theory of surveying ..	—	—	—	—	1	—
Geometrical artillery drawing	2	2	2	2	—	—
Geometrical architectural drawing	—	—	—	—	3	2
Fortification plan drawing	—	—	1	—	4	4
Plan drawing	—	—	—	—	2	—
Veterinary science ..	2	()	(2)	(2)	(2)	(2)
French	(2)	()	(2)	(2)	(2)	(2)
English	(2)	()	(2)	(2)	(2)	(2)
Freehand drawing ..	(2)	()	(2)	(2)	(2)	(2)
Total	27	28	30	28	30	29

Figures in parentheses indicate voluntary subjects, not included in totals.

PRACTICAL EXERCISES.

Subjects.	Field Artillery, First Year.	Foot Artillery, First Year.	"Selecta."	Engineers.	
				Lower Course.	Higher Course.
<i>A.—During the Theoretical Course.</i>					
Visits to the gun foundry, artillery repairing shops, powder mills, laboratory, small-arm factory, and (for foot artillery and engineer officers) inspection of the siege train material at Spandau	4	5	—	3	—
Attendances at practice of the school of gunnery	3	3	3	3	—
Tactical exercises	2	2	—	—	2
Practical field fortification	2	2	—	2	—
Inspection of the fortress of Spandau	—	1	—	1	—
Visit to the fortress model room	—	—	—	1	—
Siege manoeuvres at Spandau	—	—	—	—	3
Visits to industrial establishments and buildings in construction	—	—	—	3	3
Technical inspection of Spandau	—	—	—	—	1
Visit to the museum	—	—	—	1	—
Exercises in drawing plans of buildings	—	—	—	—	6
Total ..	11	13	3	14	15
<i>B.—After the Theoretical Course.</i>					
Practical field telegraphy	—	—	—	8	—
Surveying exercises	—	—	—	24	—
Total ..	—	—	—	32	—

(b.) *The Bavarian Artillery and Engineer School (at Munich).*

This school is organised almost exactly on the lines of the Prussian school at Berlin, but receives only Bavarian officers. It is in charge of a lieutenant-colonel. The number of instructors is six, and that of directors and officers for discipline and instruction is three (first lieutenants). The number of lieutenants studying is 14 of the field and 6 of the foot artillery, and 5 of the pioneers.

(c.) *The War Academy (Die Kriegs-Akademie).*

The War Academy at Berlin corresponds to the British Staff College, and is the highest military educational establishment of the German army. Its object is to give a special military training to a number of selected officers to qualify them for employment in the General Staff, the *Adjutantur*, the military educational establishments, and, lastly, in the higher ranks of the army.

An officer desiring to enter the War Academy must have at least three years' service, but it is not usual for officers to present themselves before their sixth or seventh year. The application of each officer must be approved of by his regimental commander, who has to state his opinion as to whether the applicant has a thorough practical knowledge of his duties, an inclination to or aptitude for study, good health, good moral character, and certain private means, also whether the officer proposes to continue his regimental mess subscriptions or not during his course at the War Academy. The number of officers in each army corps desiring to be examined has to be reported by the Chief of the Staff to the Director of Studies at the War Academy by the 15th February in each year. On receipt of instructions from army headquarters, the candidates are assembled on a date fixed by the general officer commanding at the headquarters of each army corps, and are there examined by a board consisting of the Chief of the Staff of the army corps as president, and an undetermined number of field officers or captains as members. Each candidate must first hand in to this board:—

(a.) An autobiography, in German and French, written by himself, without assistance, shewing how he has been educated, how he has prepared himself for his ensign's and officer's examinations, any journeys abroad he has made, detached duties he has been employed upon, &c.

(b.) A plan of a battle, with contours and mezzotint, about 8 inches \times 3½ inches in size, on a scale of $\frac{1}{75000}$, drawn without help by the candidate, to shew his proficiency in plan-drawing.

(c.) An essay on a subject chosen by the candidate from among a certain number—generally five—prescribed by the Committee of Studies of the War Academy. This latter is voluntary.

The programme for the examinations is published in December, and the examinations are generally held in the following March. The examination comprises:—

1. Mathematics—arithmetic, algebra up to equations of the second degree, permutations, combinations, binomial theorem and probability, plane trigonometry, and mensuration (2 papers).
2. History (general) of a specified period (1 paper of 2–3 hours, generally only one question in the form of an essay).
3. Geography (general), 1 paper of 1½–2 hours as for history). The continent is specified beforehand.
4. Military sciences.
 - a. A tactical problem (2–3 hours).
 - b. Artillery and small arms (1 paper or essay, 1½–2 hours).
 - c. Field fortification (a paper or essay 1½–2 hours).
 - d. Permanent fortification (as for field fortification).
 - e. Military topography (as above).
5. Modern languages. A translation into French.

During the examination the use of books, &c. is forbidden, except tables of logarithms in 1, and a French dictionary in 5. From specimens of the examination papers it is evident that the great object of the examinations is to bring out what the candidate knows, not what he does not know, and that “catch questions” and questions involving a mere effort of memory are unknown. The great object is to make the candidate *think*. The time prescribed for each essay, &c. is not allowed to be exceeded, but the actual time occupied by each officer in writing it is noted on the paper by the Board.

The candidates' papers are forwarded by the Board to the Committee of Studies of the War Academy, and by them a figure of merit is assigned to each as follows:

- 9—Excellent.
- 8—Very good.
- 7—Good.
- 6—Tolerably good.
- 5—Satisfactory.
- 4—Mediocre.
- 3—Insufficient.
- 2—Almost unsatisfactory.
- 1—Quite unsatisfactory.

No one is considered to have passed who does not at least attain “5—satisfactory” in *all* his subjects, although a figure of merit below 5 in one of his military subjects is allowed to be balanced by one above 5.

On the basis of the result of this examination, a list is drawn up, from which the Chief of the Great General Staff selects the 90 to 100 officers to be admitted each year to the War Academy.

The 50 or 60 highest on the list are generally selected, the results of the examination being alone considered in their case. In that of the remaining 40 or 50 officers, other considerations, such as decorations, wounds, higher (university) education, length of service, &c. come in, and a selection is made from among them. Thus the field of choice is enlarged and a thoroughly able body of students secured.

The War Academy occupies a handsome building in the Dorotheen-Strasse in Berlin, its back windows looking on to the Unter den Linden. Besides class rooms and a large mess room, it has several large halls where lectures are given, which may be attended by all officers, and which are also used for dances, &c.

The supreme direction of the studies of the officers at the Academy is in the hands of the Chief of the Staff of the army. The Director of the Academy is a lieutenant-general who has an Adjutant, and who is assisted by two field officers, and an official as treasurer. Twelve subordinate employes are attached to the Academy. The Committee of Studies is composed of a president (the Director of the Academy) and five members, three major-generals and two colonels. These latter all hold other military appointments, one* being President of the Committee of Artillery Examinations, one Commander of a Brigade of Foot Guards, one Chief of the Staff of the Guard Corps, a fourth Inspector of an Engineer Inspection, and a fifth the Commander of the Guard Artillery Brigade. The staff of military professors numbers in all 20 officers of the rank of captain and above, besides an official of the Judge Advocate's Department and a medical officer for their special branches, and a certain number of civil professors. Of the 20 military professors, one is also Assistant Director, 14 hold at the same time appointments in the Great General Staff or the General Staff of the Guard Corps in Berlin, one is Colonel of the Railway Regiment, and two belong to the foot artillery and two to the engineers and hold appointments in connection with those arms. Thus the professors are kept in touch with what is going on in the army, and have every opportunity of keeping themselves *au fait* with the latest changes in military science.

The following is the distribution by arms and contingents of the officers studying at the Academy according to the Army Lists for 1887 :—

			Prussia, &c.	Saxony.	Württemberg.
Infantry	..	..	148	15	7
Cavalry	..	..	43	1	2
Artillery, Field	..	..	41	2	3
„ Foot	..	..	12	1	—
Engineers	..	..	2	—	—
Train	..	..	1	—	—
Total			247	19	12

Grand Total, 278.

* In 1887.

The course of study lasts three years, and its extent and the number of lectures a week are shewn in the following table :—

OBLIGATORY COURSE.

First Year.	No. of Lectures a week.	Second Year.	No. of Lectures a week.	Third Year.	No. of Lectures a week.
Tactics	4	Applied tactics	4	Military history (19th century)	6
Military history	2	Military history (18th century)	5	Siege warfare	3
Artillery and small arms...	4	Permanent fortification ...	3	Coast defence	
Field fortification	3	Military topography	2	Staff duties	4
Mathematics	7	Military geography	3	Military law	1
		Military administration ...	1	Military hygiene	

VOLUNTARY SUBJECTS.

General history	4	Higher mathematics	4	Higher mathematics	4
General geography	4	General history	4	History of literature	4
Physical geography	2	Experimental sciences ...		Chemistry	3
				Geodesy	3
				General History	3

French and Russian are also taught, each in three classes, but officers are arranged in them not by years but according to their proficiency on entering the Academy.

The practical exercises of the first and second years include reconnaissances near Berlin, and visits to the gun foundry, powder mills, artillery workshops, and fortifications at Spandau, to the fortress model room at Berlin, and to the artillery and infantry experimental ranges. After the second year a portion of country is surveyed by the class, and at the end of the third year a "staff journey" lasting 21 days is made by the class, and all problems which might occur in war are worked out.

Examinations are held at the end of the first and second years, but, as text books are allowed in all the papers, "cramming" is unnecessary. No examination is held at the end of the third year, but officers receive subjects for essays or papers in all the branches of instruction, and have to hand such in before the end of the year. Each officer receives a certificate shewing the results of his examination, or the credit awarded for essays, &c., in each year.

In the recess between the first and second years' study, infantry officers are attached to cavalry regiments, cavalry, artillery, and engineer officers to the infantry; in that after the second year, infantry and cavalry officers to field artillery, artillery and engineer officers to cavalry regiments.* Any officer may, at his own request and provided no expense be incurred, be attached also to engineers, foot artillery, or the

* Cabinet Order of 26th April, 1888, provides that half the infantry and cavalry officers will be attached to Field Artillery during the first recess, the other half during the next recess.

Railway Regiment. After the three years' course, all officers return to their regiments, and forty of the best are called up on the following 1st of May to be attached for a year to the Great General Staff, so that their abilities may be further tested. This course may be prolonged to two or even three years, and from the officers so trained those of the General Staff are selected. To the Prussian Great General Staff 54 such officers are at present attached.

(d.) *The Bavarian War Academy at Munich.*

This Academy is formed on an exactly similar plan to that at Berlin, and its conditions of admission, objects, and course of study are almost identical. It was formed in 1867. At its head is a major-general and there are two special military professors. The number of officers shewn in the 1887 Army List as students is 16 of the infantry, 6 of the cavalry, 8 of the field artillery, 1 of the foot artillery, and 2 of the engineers, total 33 officers. To the Bavarian General Staff are attached 7 officers. The professors and instructors at the Bavarian War School are also employed in a similar capacity at the War Academy.

INSTITUTIONS FOR THE TRAINING OF MEDICAL OFFICERS AND
VETERINARY SURGEONS.

(a.) *The Frederick William Medico-Chirurgical Institute at Berlin.*

This establishment is intended for 160 pupils, who receive quarters and instruction free of cost and a monthly allowance of 1*l.* 10*s.* In return for this, they are bound to serve two years for each of the four years passed at the Institute, irrespective of the obligatory service of one year.

The War Minister is the curator of the Institute, its director is the Surgeon-General of the Army, and its staff further consists of a Surgeon-General as sub-director, a secretary and twenty-seven Surgeons as instructors, &c.

At the close of the four years' course, the pupils are posted to the army as Sub-Surgeons, their service commencing to count from that date.

The conditions of admission are that the candidates should be under twenty-one years of age, be in possession of a certificate for admission to an University, and be in robust health. The students are subject to military law, and are liable to such punishments as the director may be competent to award.

(b.) *The Medico-Chirurgical Academy.*

This establishment, at Berlin, is intended for fifty students, all of whom receive their instruction free, the seniors receiving quarters also, and the juniors 9*l.* per annum in lieu of quarters. In return for this, they serve one year in the army for every one of the four years passed in the Academy, in addition to the one

year's obligatory service. The conditions of entry are the same as for the Frederick William Institute.

(c.) *The Military Veterinary School (Die Militair Rosarzt-Schule).*

This school is intended for the training of Veterinary Surgeons for the army, and is established at Berlin. It is under the Inspector of the Military Veterinary Department and is in charge of a field officer of cavalry, assisted by one corps and four chief veterinary surgeons. The subordinate *personnel* comprises 1 secretary, 2 veterinary surgeons, 2 sergeant-majors, 2 sergeants, 1 farrier, and 7 servants.

The conditions of admission are that the candidates must have served at least one year in the cavalry, field artillery, or train (but must not be one-year volunteers), must have received a certificate of fitness to enter the first class of a gymnasium, must not be more than twenty-four years old on the 1st November of the year in which they enter the school, and must declare their willingness to serve the portion of their obligatory period of service unexpired when they entered the school, *plus* two years for each year passed in it. They should be farriers by trade. They first pass a six months' course at the Farriers' School, in Berlin, and then return to their regiments, joining the Veterinary School on the following 1st October. The course lasts three years, men who do not pass the examination at the end of the second year being sent back to their regiments. On passing the final examination they are appointed Assistant Veterinary Surgeons. The school is capable of receiving 145 students. They are under military discipline and are not allowed to wear plain clothes.

(d.) *The Farriers' Schools (Militair Lehrschmieden).*

There are six of these schools, at Berlin, Breslau, Königsberg, Gottesaue, Hanover, and Munich. Each of them is under a captain or field officer of cavalry, the Chief of the Berlin School being also head of the Military Veterinary School. He is assisted by a corps or chief veterinary surgeon, who also fulfils other duties on the staff or with a regiment, and the subordinate *personnel* comprises 1 veterinary surgeon, 1 sergeant-major, and 1 servant. The Berlin and Munich Schools have each a second chief veterinary surgeon in addition.

To these schools, the cavalry, field artillery, and train send men who have served at least six months, are of good character, are farriers by trade, and can read and write. Preference is given to men who re-engage. Men of the 1st, 2nd, 5th and 9th Corps join the Königsberg, those of the 3rd, 4th, 6th, and 11th Corps, the Breslau, those of the Guard, 7th, 8th, and 10th Corps, the Hanover, those of the 14th and 15th Corps, the Gottesaue, and those of the Bavarian Army, the Munich School. Men of the infantry may also be sent to the Gottesaue School. The courses last six months, two being held each year, and at the end of them the pupils return to their regiments and are appointed lance-corporals, being promoted to farrier as vacancies occur.

G. INSTITUTIONS FOR SPECIAL TRAINING.

(a.) *The Military Riding Establishment (Die Militär-Reit-Institut).*

This institution is established in Hanover, and its objects are to train officers and non-commissioned officers of cavalry and artillery as instructors in riding and fencing, to ensure an uniform system of equitation throughout the army, to experiment upon all new inventions concerning the cavalry, and to impart instruction to the students in the destruction of railways and telegraphs. It is under the War Ministry and would be broken up on the mobilisation of the army.

It consists of two sections, the Officers' Riding School and the Non-Commissioned Officers' Riding School. The staff consists of a major-general as commandant, with a major in charge of each school, and two adjutants. The instructional staff consists of nine instructors in riding and two in fencing and gymnastics. All the above are cavalry officers, and are seconded in their regiments. Two officers are in charge of stable duties, and an assistant-surgeon, a paymaster, and a chief veterinary surgeon are attached to the establishment. The permanent cadre of non-commissioned officers and men consists of 1 aspirant paymaster, 2 sergeant-majors, 8 under-officers, 125 privates, 4 farriers, and 10 workmen and artificers. There are kept up at the establishment 51 horses for the permanent cadre, 134 horses (of which 30 are young remounts) for the officers' school, and 211 (of which 15 are young remounts) for the non-commissioned officers' school, or in all 396, to which must be added 4 "*Krimper*" horses. To look after those horses, 6 under-officers, 3 trumpeters, and 169 men are detached from the various cavalry regiments, the selection of the men being made from amongst those who have served one year and are unlikely to make good riders.

For the officers' course, every cavalry regiment sends each year one officer, who must be fond of riding and well qualified to become an instructor. He must be of strong constitution and not too heavy. Each field artillery brigade sends also one officer, the 11th two officers every second year, qualified as above. All must have at least one year's service as officers. The course begins on the 1st October and lasts for eleven months. At the end of each year 38 officers, chosen from among the best riders, are retained for a second years' course, and during this they act as instructors in the non-commissioned officers' school. Officers bring their horses with them, but do not ride them in the school.

For the non-commissioned officers' course, each cavalry or field artillery regiment sends one under-officer or lance-corporal each year. These men must have at least two (only in special cases one) years' service, and at least one year to serve after their return from the course. Generally, however, only men who propose to make the army a profession are sent. They must be men likely to make good non-commissioned officers.

Their course also begins on the 1st October, and lasts eleven months, but none are kept for a second year.

A detachment is sent every year from the Railway Regiment to instruct the officers and non-commissioned officers in the destruction of railways and telegraphs.

(b.) *The Bavarian Riding Establishment (Equitations-Anstalt).*

The Bavarian establishment at Munich has the same objects as the Prussian, but in addition it trains the cadets and students at the various educational establishments in riding. Its establishment is therefore larger in proportion. It is placed under the Inspector of Cavalry, and is divided into a course for cavalry and field artillery officers and a section for students at the military educational establishments. No non-commissioned officers are sent to it for instruction.

The institution is placed under the command of a field officer, with a second lieutenant as adjutant, 4 captains as instructors, 1 medical officer, 1 paymaster, and 1 chief veterinary surgeon. The subordinate *personnel* is composed of 12 non-commissioned officers, 1 farrier, 84 privates as grooms, 5 artificers, and 1 aspirant paymaster, with 108 horses, of which 2 under-officers, 14 privates, and 20 horses are on command from the cavalry regiments and the remainder belong to the school.

Each cavalry or field artillery regiment sends one officer of not less than four years' service as an officer to the establishment on the 1st October for an eleven months' course, and ten of them are kept for a second year's course.

(c.) *The Saxon Riding School (Militair-Reit-Anstalt).*

This school is established at Dresden, and furnishes instructors in riding for the cavalry, field artillery, and train, besides giving riding instruction to the cadets and breaking horses which are sold at cost price to infantry and artillery officers. It is commanded by a field officer assisted by two lieutenants detached from their regiments. Officers and non-commissioned officers are attached to it for instruction and duty as in the Prussian School.

(d.) *The Military Gymnastic School (Militair-Turn-Anstalt).*

This institution, at Berlin, is intended to train instructors in gymnastics for the army. It is under the Inspector of Infantry Schools, and has a staff of a field officer as director, one captain and two first lieutenants as instructors, a medical officer, a paymaster, an aspirant paymaster, and 2 servants. There are two courses in each year of five months each, from the 1st October to the end of February, and from the 1st of March to 31st July. To each of these 9 officers as instructors,

and 95 officers as pupils, are sent. The latter are selected from officers with at least three years' service, who are tolerably good gymnasts, and who are of powerful frame and good constitution. They live in private quarters during the course, and there is no mess establishment. About 20 hours a week are devoted to gymnastic exercises, escalading, fencing, &c., and three lectures are also given. A library is attached to the school.

(e.) *The School of Musketry (Militair-Schiess-Schule).*

The object of the School of Musketry, which is established at Spandau, is to form capable instructors of musketry for the infantry, to follow the development of small arms in general, and to apply the results obtained and the progress made to the benefit of the army at large. The Staff consists of a field officer as commandant, with another as assistant-commandant, 4 captains as Members of Council and Directors, 7 lieutenants as instructors, 1 lieutenant as adjutant, and a paymaster. Eight lieutenants are attached as assistant-instructors. The subordinate *personnel* of the school is furnished by the infantry at large, each army corps being detailed to furnish its quotum. The strength of this *personnel*, which is called the "*Stamm*" or cadre company, is 1 bugler, 61 privates, and 10 artificers and workmen, but these are sent in two series from 15th March of one year (say 1888) to the 14th March following (1889), and from the 1st August (1888) to the 31st July (1889), so that from the 1st August to the 14th March, *i.e.*, in the winter season, this number is doubled.

Two courses of instruction in musketry are held each year, for each of which lieutenants, under-officers, buglers, and privates are detailed, the under-officers having also to do duty with the cadre company. In 1887 the first course lasted for officers from 10th March to 9th June (3 months), for other ranks from 15th March to 30th June (3½ months); the second, for officers, from 1st August to 31st October, for other ranks, from 1st August to 15th November. Each army corps sent to one or other of these courses 4 or 5 lieutenants (6 for the 11th Army Corps) and 1 under-officer per battalion. The privates were only sent as fatigue men and artificers. The rifles and engineers sent each 1 or 2 officers and 6 to 9 under-officers to each course. The total of the first course was 39 officers, 230 under-officers, 5 buglers, 100 privates, and 6 artificers; of the second course 1 officer and 1 under-officer fewer.*

For these courses lieutenants are chosen who are not very far off their promotion to captain, although in special cases younger officers may be sent. The under-officers are entirely chosen from those who have a long period to serve, and whose services will therefore be of value as instructors of musketry. The men sent for the cadre company must be intelligent and good shots, and have good eyesight and constitutions.

* For 1888, the first course is to be divided into two, which are to be attended by 1 lieutenant per cavalry regiment and 1 under-officer per squadron.

In addition to the above courses, short courses for senior officers, termed "Information courses," are held in each year to enable those officers to keep up their knowledge of the most recent improvements in firearms, and changes in musketry and fire tactics. For 1887 two such courses were ordered, the first to last from the 10th to the 30th June, and to be attended by all commanders of rifle battalions and under-officers' schools who had not yet been detailed for such a course, a commander of a pioneer battalion, a company commander from each infantry division, two company commanders of rifles, and two company commanders of the under-officers' schools, the second to last from the 5th to 13th October, and to be attended by three or two commanders of cavalry regiments per army corps according as it possessed six or fewer regiments, drawn from those who had not yet followed a course, four officers of the General Staff, and two of the War Ministry.

(f.) *The Bavarian School of Musketry (Schiess-Schule).*

The Bavarian School of Musketry at Augsburg is organised on the plan of the Prussian School, and is commanded by a major-general, assisted by 3 captains of the permanent staff, and 2 lieutenants attached temporarily. The permanent cadre comprises also 1 paymaster, 5 under-officers, 8 lance-corporals, and a civilian armourer. Each regiment of infantry sends 1 officer and 6 under-officers, and each rifle battalion 1 officer and 2 under-officers each year, in the month of April, to the school for a four months' course. Each officer takes his servant with him, and these also take part in the course. The *personnel* under instruction is divided into an officers' and a non-commissioned officers' course. As in the Prussian School, men are also detached from their regiments for four months for fatigue duties.

(g.) *The School of Gunnery (Artillerie-Schiess-Schule).*

The School of Gunnery at Berlin was founded in 1867 with the object of providing efficient instructors of gunnery for the artillery, and improving the shooting of the arm. It is under the Inspector-General of Foot Artillery, and is composed of a permanent cadre and of a certain number of officers and non-commissioned officers attached for courses of instruction. The permanent cadre is composed of a staff (of a colonel as commandant, two first lieutenants as adjutants, four majors or captains as instructors, a lieutenant-artificer, a medical officer, a paymaster, an aspirant paymaster, two under-officer clerks, 8 tradesmen, and 2 hospital assistants, with 1 sergeant-major and one sergeant of the Ordnance Corps attached), an instructional field battery, and an instructional foot artillery company. The field battery comprises 4 officers, 16 non-commissioned officers, 2 trumpeters, 109 men, and 22 riding and 44 draught

horses, and the company 4 officers, 18 non-commissioned officers, 2 trumpeters, and 98 men. The cadre is recruited by transfers from the rest of the artillery, no recruits nor remounts being sent to it; the gunners must have one and the drivers two years' service, and the officers are seconded in their regiments. On mobilisation it forms a reserve field battery and a reserve foot artillery company for the Guard Artillery.

There are two courses held at the school in each year, the first lasting from the 1st October to the 28th January; the second from the 6th February to the 8th June. Each regiment of field artillery and each regiment or battalion of foot artillery sends a captain or lieutenant, and the foot artillery in all 14 under-officers for each course. Each is composed of 1 field officer, 16 captains, 15 lieutenants, and 14 under-officers, chosen from the whole German army. Shooting is carried on over the Tegel practice range, near Berlin, or at the range at Zossen, at the terminus of the military railway.

The subjects of instruction are, theory of construction of artillery material, manufacture of ammunition and projectiles, inspection of material, packing of ammunition, and repairs to carriages and ordnance, besides an extended course of gunnery, shifts, and practice from all descriptions of ordnance. Visits are also made to the technical and manufacturing establishments of the artillery, and the war game is practiced. As a rule, in a week, three days are given up to practice, one to visiting the manufacturing establishments, repository exercises, drill, or making up ammunition, one to theoretical instruction or the war game, and one to attendance at the practice of the experimental committee. Sunday is a holiday. The course is so arranged that one-third of the time is devoted to field artillery and two-thirds to foot artillery work. The officers and non-commissioned officers of the course execute all the drills, &c., themselves, under the instructors. The battery and company commanders have special charge of all drills executed without firing, and give instruction in driving.

(h). The Instructional Battalion (Lehr Infanterie Bataillon).

This battalion, stationed at Potsdam, is instituted for the purpose of maintaining an uniform system of drill and duty throughout the infantry of the army. With this object, a different party of officers, non-commissioned officers, and men is detached each year from every regiment of infantry in the 1st to 15th Army Corps (the two Bavarian Corps and the Guards send none), and organised at Potsdam as a tactical body for a period of six months.

The permanent staff consists of a major, as commander, a second lieutenant as adjutant, an assistant surgeon, and a paymaster, all belonging to the Guard Corps. The battalion is assembled about the middle of April, and consists of two classes

of officers and men—those sent for six months' instruction (till the end of the autumn manœuvres), and those sent to form the cadre company for a year, till the middle of the following April. For the year 1888 the following was the composition of the battalion :—

Officers.—3 captains, 3 first lieutenants, and 10 second lieutenants, including 1 captain, 1 first lieutenant, and 2 second lieutenants for the cadre company.

Under Officers and Men.—40 under-officers, 12 drummers, 4 buglers, and 528 privates, including 16 under-officers, 4 drummers, 4 buglers, and 112 privates for the cadre company. Each army corps sent 2 to 3 under-officers, a drummer or bugler (if necessary), and 30 to 46 privates, including 1 or 2 under-officers, drummers and buglers as required, and 6 to 11 privates for the cadre company.

Under-officers and men sent must be well conducted, fully instructed in all branches, and in good health. They must not be less than 5 feet 4 inches, nor more than 5 feet 11 inches in height. The men must be in their second year of service, and none must be sent whose period of service expires while they belong to the battalion. The under-officers should be senior men of experience. All ranks may receive promotion in their own regiment during the time they are with the battalion, but the commander of it must first be communicated with to ascertain how they have behaved while with the battalion. Those promoted to under-officer or sergeant-major return at once to their regiment, others being sent in their place; those promoted to lance-corporals or sergeants remain with the battalion. Each man brings his complete uniform (except the war uniform) with him, and every private soldier a small entrenching tool. The regimental uniform is worn the whole time the men are with the battalion, and uniformity is in a measure attained to by placing men from army corps with the same coloured shoulder straps in a company together.

The battalion is attached to the 1st Guard Infantry Brigade and goes through the manœuvres, &c., with that Brigade. On mobilisation it is broken up, and the officers and men at once return to their regiments.

Men who have passed the course of the instructional battalion receive a badge of braid across the bottom of the shoulder strap.

CHAPTER IV.

PAY AND ALLOWANCES.

A. OFFICERS OF THE ACTIVE LIST.

The pay and allowances in money of officers are made up of five different parts, viz:—

- a. Pay according to rank (*Gehalt*).
- b. Command or staff pay (*Zulage*).
- c. Lodging allowance (*Servis*).
- d. Supplementary lodging allowance (*Wohnungsgeldzuschuss*).
- e. Stable allowance (*Stallgeld*).

Of these, the first two are invariable for each rank or for each appointment, while the three latter vary according to the garrison the officer is stationed in.

(a.) Pay.

The following are the monthly rates of pay of officers:—

	£	s.	d.
Field Marshal, General, or Lieutenant-General ..	50	0	0
Major-General.. .. .	37	10	0
Field Officer, commanding a brigade or regiment	32	10	0
Field Officer:—			
a. Of the Gardes du Corps Regiment ..	25	1	6
b. Of the War Ministry, General Staff, 1st Foot Guards, instructional battalion, cavalry, artillery, engineers, railway troops, train, War Academy, and war schools ..	23	15	0
c. Others	22	10	0
Captain of the 1st class:—			
a. Of the Gardes du Corps Regiment ..	17	12	0
b. Of the War Ministry, 1st Foot Guards, cavalry, artillery, engineers, railway troops, train, and War Academy ..	16	5	0
c. Others	15	0	0
Captain of the 2nd class:—			
a. Of the War Ministry, 1st Foot Guards, cavalry, artillery, engineers, railway troops, train, and War Academy ..	10	10	0
b. Others	9	0	0
First Lieutenant:—			
a. Of the Gardes du Corps Regiment..	5	11	6
b. Of the 1st Foot Guards, cavalry, artillery, engineers, railway troops, and train ..	5	5	0
c. Others	4	10	0

Second Lieutenant:—

a. Foot artillery, engineers, and railway troops	4	19	0
b. Gardes du Corps Regiment	4	17	0
c. 1st Foot Guards, cavalry, field artillery, and train	4	4	0
d. Others	3	15	0
Field Officer or Captain, as Town-Major in Berlin..	22	10	0
Ditto in Metz or Strassburg	15	0	0
Ditto in other first class fortresses or garrisons	11	10	0
Ditto in second class fortresses	9	0	0
Ditto (or Lieutenant) in third class fortresses	7	15	0
Supernumerary Second Lieutenants of artillery or engineers, until brought on the establishment..	3	15	0

Officers' pay is paid monthly in advance, and no part of it can be deducted after payment. If an officer dies and leaves a family, they have a right to another month's pay, as is also the case if he leaves parents in poor circumstances. On the appointment, promotion, or transfer of officers, the pay of their new rank begins on the 1st of the month in which their promotion, &c., is gazetted.

Officers granted leave for periods not exceeding 45 days receive full pay all the time. Those on leave for over 45 and under 180 days, have the following daily sums deducted after the first 45 days;—

For a yearly pay of—

	s.	d.
600 <i>l.</i> and over	16	6
450 <i>l.</i> to 600 <i>l.</i> (exclusive)	12	0
390 <i>l.</i> to 450 <i>l.</i> do.	9	0
270 <i>l.</i> to 390 <i>l.</i> do.	7	6
180 <i>l.</i> to 270 <i>l.</i> do.	4	0
108 <i>l.</i> to 180 <i>l.</i> do.	2	6
93 <i>l.</i> to 108 <i>l.</i> do.	2	3
72 <i>l.</i> to 93 <i>l.</i> do.	1	9
54 <i>l.</i> to 72 <i>l.</i> do.	1	3
45 <i>l.</i> to 54 <i>l.</i> do.	1	0

Officers granted leave for periods over 180 days receive no pay at all, unless the leave is sick leave, in which case they receive full pay.

All regimental officers of and below the rank of Captain, have a monthly deduction of at least 30*s.* in the cavalry, and 24*s.* in the other arms, made from their pay and paid into the regimental clothing fund. From this fund they may obtain the articles of clothing and equipment they require, and at the end of the year may receive back the unexpended balance of their

subscriptions. Married officers have to contribute to the widows' fund, at such a rate as to secure to the widow a pension of 30*l.* to 75*l.* a year according to the husband's rank. It may here be noticed that in Germany no officer can marry without leave, and that, to obtain permission, a subaltern must show that his proposed wife has a private income of 125*l.* a year, while that of a second class Captain must have 75*l.* a year. Above that rank no private fortune is required.

(b.) *Command or Staff Pay (Zulage).*

This pay is attached to the appointment and is in addition to pay proper or *Gehalt*, in fact almost exactly the same as the Staff Pay and Staff Corps Pay in India. The following are the principal (but by no means all) rates of *monthly* pay allowed under this head:—

	£	s.	d.
Army Corps Commander or Chief of the General Staff of the Army	75	0	0
Governor of Berlin	62	10	0
Inspector-General of artillery or engineers.. .. .	50	0	0
(Increased to 75 <i>l.</i> if a General junior in rank is appointed to command an army corps.)			
Governor of Metz	50	0	0
Governors of Mainz and Strassburg.. .. .	31	10	0
Commander of a division, Inspector of artillery or engineers, Director of a department in the War Ministry, Quartermaster-General, Inspector-General of Military Education, Chief of the Military Riding School, Governors of Cologne and Ulm, &c.	18	15	0
Director of the War Academy	15	0	0
Brigade Commander, Inspector of Landwehr, Chief of a section in the Great General Staff, Chief of the Staff of a Corps, Inspectors of rifles, of infantry schools, of war schools, of small arms factories, and of the train, Commandants of first and second class fortresses, &c., &c. ..	3	5	0
Adjutant (regimental, battalion, brigade, &c., &c.) ..	0	18	0
Adjutant of a Landwehr battalion district.. ..	1	10	0
Experimental Artillery Committee:—			
President or Members	3	15	0
Commander of the Experimental Company ..	3	0	0
Lieutenant ditto.. .. .	1	16	0
School of Gunnery:—			
Captain commanding a battery	3	0	0
Lieutenant	1	16	0
Railway Regiment:—			
Captain	3	0	0
Lieutenant	1	16	0

Officer officiating in, or attached to, the General Staff	3	0	0
Small Arms Factories:—			
Captain as sub-director	3	15	0
Permanently attached officer	3	0	0
Officer attached for 1 year	1	16	0
Experimental Small Arms Committee:—			
Field Officer as member	3	15	0
First Lieutenant as company commander	3	0	0
Assistants, 2 at 3 <i>l.</i> , and 3 at 2 <i>l.</i> 5 <i>s.</i>			
Inspector of Military Telegraphs (Field Officer) ..	3	15	0
Assistant (Lieutenant) to ditto	1	16	0
Cadet Corps:—			
Commander of the Central Cadet Institution..	3	15	0
Commander of a Cadet House.. .. .	2	10	0
Commander of a cadet company	1	5	0
Adjutant or company officer	2	0	0
Instructor (military)	3	0	0
War Academy:—			
1st and 2nd Members of the Committee of Studies, each	3	15	0
3rd to 6th Members and Secretary ditto	2	10	0
War Ministry:—			
Directors of Departments	18	15	0
Chiefs of sections	3	15	0
Attached officers	3	15	0
Instructors in War Schools	1	17	6
Instructional Battalion:—			
Captain	3	15	0
Lieutenant	1	16	0
Military Riding Establishment:—			
Instructor	3	0	0
Attached officer	1	16	0
School of Musketry:—			
Field Officer, member of committee	3	15	0
4 Assistant instructors at 3 <i>l.</i> , and 4 at 2 <i>l.</i> 5 <i>s.</i>			
Attached officer	1	16	0
Military Gymnastic School:—			
Captain as instructor	2	5	0
Lieutenant as instructor	3	0	0
Lieutenant as assistant instructor	2	5	0
Attached officer	1	16	0
Under-Officers' Schools:—			
1st Lieutenant as company commander	3	0	0
Company officer	1	16	0
Landwehr Battalion District Commanders:—			
Berlin (4 in all) each	6	0	0
1st Breslau and Cologne, each.. .. .	12	0	0
Hamburg.. .. .	7	10	0
Frankfurt-on-the-Maine, Altona, Barmen, Glogau, Hanover, Königsberg, Magdeburg, and Stettin, each	6	0	0

These allowances are paid and calculated in the same manner as the pay. Officers officiating for others receive the Staff pay of their appointments.

Officers taking part in field firing exercises, minor tactical exercises, or tactical instruction journeys, which necessitate their being at least one night absent from their quarters, receive: if Field Officers, 5*s.*, if Captains, 4*s.*, and if Lieutenants, 3*s.*, for each night so absent (*Kommando-Zulage*). Officers of the War Academy taking part in instructional journeys receive 2*s.* a day. When the reserve men are called out for training for fourteen days, the Lieutenants of the line attached to them receive each 1*l.* 4*s.* for the training, and this allowance is repeated for each separate training in the same year or month.

(c.) Lodging Allowance (*Servis*).

This allowance is calculated upon the relative expense of living in the various towns of the Empire, and is divided into six classes. The extraordinary class comprises the capitals of the various states, such as, Berlin, Munich, Dresden, Strassburg, &c., and some large towns, such as Frankfurt, Hamburg, Bremen, Metz, and Mühlhausen. The first class embraces about fifty towns; the second, all the towns of a certain importance; the third, towns of less than 10,000 inhabitants, and the fourth and fifth, small places in the majority of which there are no garrisons. There are two kinds of *Servis*; the first, called *Selbstmiether-Servis*, is paid to officers who have to provide their own quarters, &c., the second, or *Natural-Quartier-Servis*, is paid to the person on whom an officer is billeted, the latter being quite the exception in ordinary times. The tariff of yearly lodging allowance is as follows:—

Rank.	Berlin, &c.	1st Class.	2nd Class.	3rd Class.	4th Class.	5th Class.
<i>Selbstmiether-Servis.</i>						
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
General	113 0 0	97 4 0	73 16 0	68 8 0	59 8 0	59 8 0
Lieutenant-General ...	98 2 0	75 12 0	59 8 0	54 0 0	46 16 0	46 16 0
Major-General	81 0 0	61 4 0	46 16 0	41 8 0	36 18 0	36 18 0
Colonel	65 14 0	48 12 0	37 16 0	34 4 0	29 14 0	29 14 0
Major or Captain	48 12 0	35 2 0	28 16 0	25 4 0	21 12 0	21 12 0
Lieutenant	27 0 0	22 10 0	18 0 0	15 6 0	14 8 0	14 8 0
One officer's horse ...	5 8 0	4 16 5	3 12 0	3 1 2½	2 14 0	2 10 3½
Every other horse belonging to the same officer	1 16 0	1 5 2½	0 18 0	0 18 0	0 14 5	0 14 4
Office room	9 0 0	7 4 0	6 6 0	5 8 0	5 8 0	5 8 0
<i>Natural-Quartier-Servis.</i>						
General	65 14 0	48 12 0	37 16 0	34 4 0	29 14 0	29 14 0
Colonel, Major	48 12 0	35 2 0	28 16 0	25 4 0	21 12 0	21 12 0
Captain, Lieutenant ...	27 0 0	22 10 0	18 0 0	15 6 0	14 8 0	14 8 0
Sergeant-Major	12 12 0	10 12 0	8 9 0	7 8 0	6 6 0	5 6 0
Ensign	7 8 0	6 6 0	5 6 0	4 15 0	4 6 0	3 14 0

The vast majority of German officers are not provided with quarters in barracks. In the barracks of recent construction there are quarters provided for at most four officers per battalion, and those are generally occupied by the junior unmarried officers, who receive, if Lieutenants, a reduced "*Servis*" (*Kasernen-Servis*) of 2*l.* 5*s.* a year, if Captains, 3*l.* 12*s.* The same sums are given to officers in hut barracks on the artillery practice ranges.

Servis for broken periods is not counted by simply dividing the yearly allowance by twelve. Summer and winter months have different sums assigned to them; thus, for a summer month, a Lieutenant in a first-class garrison would receive 1*l.* 11*s.* 2½*d.*, for a winter month 2*l.* 3*s.* 10*d.* *Servis* of a higher rank or different class is given on the same principles as increase of pay (see above), and it is issued, like pay and staff pay, monthly in advance.

If officers have rented houses for certain periods, and are ordered to another garrison, or on active service, and the landlord has not been able for any reason to re-let his house, compensation for nine months' rent from the expiration of the month in which the officer was ordered away, may be granted to the latter. It is only payable on the expiration of this term.

(d.) *Supplementary Lodging Allowance* (*Wohnungsgeldzuschuss*).

This allowance only dates from 1873, and may be considered as a real addition to pay to compensate for the ever-increasing dearness of the means of life. It is calculated according to the same classes as the *Servis*, and paid at the following yearly rates:—

		Class of Garrison.					
Rank.	Berlin, &c.	1st.	2nd.	3rd.	4th.	5th.	
		£ s.	£ s.	£ s.	£ s.	£ s.	
Divisional or Brigade Commander..	75	60 0	45	36 0	30 0	30 0	
Regimental Commander ..	60	45 0	36	30 0	27 0	27 0	
Field Officer or Captain ..	45	33 0	27	24 0	21 0	18 0	
Lieutenant ..	21	13 10	12	11 15	10 16	10 16	

All Regimental and Staff Officers receive the above sums, also those employed in the Landwehr battalion districts, in all cases, whether in private lodgings or quartered in barracks, and the allowance is continued at the same rate during the period an officer is on active service.

(e.) *Stable Allowance* (*Stallgeld*).

The number of horses allowed to each officer is given in Part I, and for those he receives allowance for the hire of stabling as shown in the table of *Servis* allowances. A certain sum is allowed for one horse, and a much lower sum for every other one; thus a Lieutenant of horse artillery in a first-class garrison receives 6*l.* 1*s.* 7½*d.* per annum for the hire of stabling for his two horses.

From the above it will be seen that the pay of a German officer is most liberally calculated, far more so than perhaps in any other European army. The object of government is to enable every officer to maintain the style of living due to his rank, and it is possible for a German officer to live on his pay, which is more than can be said for his British comrade, although, as a matter of fact, most German officers have private incomes; indeed, a certain private income is a *sine quâ non* for admission to many regiments. If the case of a Second Lieutenant of the line be taken, living in barracks in a first-class garrison, it will be seen that he receives per annum :—

	£	s.	d.
Pay, 3 <i>l.</i> 15 <i>s.</i> 0 <i>d.</i> × 12	45	0	0
<i>Kasernen-Servis</i>	2	5	0
Supplementary Lodging Allowances	13	10	0
Total	£60	15	0

besides his share of table money (see below) and any extra allowances he may receive for drilling reserve men, &c. This sum is not large for British ideas, but in Germany living is much cheaper than in England, and uniform does not cost half of what the British officer has to pay.

In addition to the above, which more or less come within the category of pay, in the British acceptance of the word, the following special allowances are drawn by German officers :—

Office Allowances.

These are for the provision of writing materials for the various offices and of all army books which are not bought out of special funds (such as clothing ledger out of clothing fund, &c.). The monthly amount is, for a division 4*l.* 1*s.*, for a brigade 3*l.* 7*s.* 6*d.*, for a regiment 1*l.* 4*s.*, for a battalion 1*l.* 7*s.* for a company 10*s.*, and for a Landwehr battalion district 2*l.* Adjutants or Lieutenants employed as investigating officers of courts-martial in their battalions receive, respectively, 18*s.* and 9*s.* monthly as office allowance.

Table Money.

Officers' table money is for the establishment and maintenance of the mess of the regiment or battalion, and is the common property of the First and Second Lieutenants and Paymasters dining at the mess. The amount is 124*l.* 4*s.* per annum for a regiment of infantry, 57*l.* 6*s.* for a regiment of cavalry, 126*l.* 12*s.* to 95*l.* 8*s.* for one of field artillery, and 167*l.* 8*s.* for a regiment of foot artillery, &c. Should the number of dining members be so small that each officer receives more than 9*s.* a

month, the surplus is credited to the general fund. Officers of the Gardes du Corps Regiment and 1st Foot Guards draw a special table money of 6*l.* a month for Field Officers, 3*l.* for Captains, and 1*l.* 16*s.* for subalterns. This also includes money as compensation for clothing.

Personal Allowance when Travelling (Tage-geld).

Under the heading of staff and command pay, it has been stated that officers taking part in field firing exercises or on other duties necessitating their being absent at least one night from quarters receive certain sums. In this case quarters are provided for the officers, but when officers are travelling on duty or changing garrison and provide their own quarters they receive a daily allowance (*Tage-geld*) calculated as follows:—

	£	s.	d.
I. Field Marshals, Generals, Army Corps Commanders, and Inspectors-General ..	1	10	0
II. Lieutenant-Generals and Divisional Commanders	1	4	0
III. Other General Officers	0	18	0
IV. Regimental Commanders	0	15	0
V. Other Field Officers	0	13	6
VI. Senior Assistants of Remount Committees ..	0	12	0
VII. Captains and Second Lieutenants of Remount Committees	0	9	0
VIII. Lieutenants	0	7	6

Journeys on duty are to be made as far as possible without stoppages, the minimum allowed being 75 miles a day by road, 250 by steamer, and 333½ by rail, and the return journey should be begun on the evening of the day on which the special duty was finished. These allowances are paid at the outside for one month. If an officer has to stay in the place he has travelled to longer than a month, the allowance ceases from the end of the month, and if his stay will probably exceed six months it ceases from the day of his arrival. When this allowance ceases, the allowance for detached duty mentioned above is paid until the officer returns to his proper garrison. In the event of the duty involving a large outlay, the War Ministry may grant additional allowances at discretion. On the march, when proceeding by stages by rail, in cantonments, and during manœuvres or tactical exercises, this allowance is not granted, but it is given to officers escorting convoys of ammunition.

Travelling Allowance (Reisekosten).

This allowance is made to officers travelling on duty with a view to covering tolls, expenses of registering and forwarding baggage, &c.

For a journey by rail or by steamer the allowance is 13 *pfennige* per *kilomètre* for an officer, 7 *pfennige* for his servant, and 3s. for the expenses of leaving the old and the same for those on arriving at the new station.

When travelling by road, officers of Classes I to V as classed for *Tage-geld* (see above) are allowed 60 *pfennige* (7½*d.*) those of Classes VI to VIII 40 *pfennige* (5*d.*) for each *kilomètre*, but officers who receive more than one ration of forage are given no travelling allowance for journeys from their own garrison not exceeding 14½ miles.

Transfer Allowances (Umzugs-Kosten).

When an officer is transferred to another garrison, he receives, if married, the following allowance:—

	Transfer allowance.	Travelling allowance for every 10 <i>kilomètres</i> .
	£	s.
I. Generals and Brigadiers ..	90	24
II. Regimental Commanders ..	50	20
III. Other Field Officers ..	25	10
IV. Captains	15	8
V. Lieutenants	10	6

By an officer's family is meant not only his wife and children but any relations habitually living with him. If the officer is unmarried, in Classes I to IV he receives half the above sums, in Class V he receives 2*l.* for distances below 350 *kilomètres* (233½ miles) and 3*l.* for longer journeys.

Allowances on Mobilisation.

The mobile or war footing commences with the day on which the Imperial order for mobilisation is issued, and ends with the day on which the special body of troops to which an officer belongs is ordered to be demobilised. Officers are bound, as a rule, to make their own arrangements for the supply and maintenance of their clothing and equipment, receiving for this purpose a special allowance on mobilisation called mobilisation money. Officers belonging, according to the mobilisation plan, to the Staff, the headquarter guard, and the administrations, exclusive of the train battalion, receive an allowance for the equipment of the train soldiers to which they are entitled of 5*l.* 5*s.* 0*d.* per soldier in the first instance with a further half-yearly sum of 2*l.* 17*s.* 9*d.* The horses to which officers are entitled are supplied to them, but in the particular cases in which they are allowed to purchase on their own account they receive 15*l.* for each horse, subject to the animal being passed as fit for service. Mounted officers whose number of horses in the field exceeds that which they are bound maintain in peace

are allowed an additional sum of 5*l.* 5*s.* 0*d.* per horse for the purchase of the necessary equipment. Those whose field equipment includes wagons receive for their provision and for the requisite harness 22*l.* 10*s.* 0*d.* for a two-horse, 45*l.* for a four-horse, and 52*l.* 10*s.* 0*d.* for a six-horse carriage. Articles provided in this way become the property of the officer, as well as any horse which he may receive to replace one purchased at his own cost. All other property provided by the State is considered as given on loan to him. In addition to the ordinary pay and allowances, field allowance is issued to every officer while his corps is on the mobile footing, and is paid monthly in arrear. The following table shows the various sums allowed under each head:—

Field Appointment.	Mobilisation money.	Train soldiers.		Number and draught horses.	Allowance for harness, &c.	Rate for one month of 30 days.				Remarks.
		Number.	Clothing money at £6 5s.			Field pay.	Allowance for clerks, harness, &c., and pay of allowance, same at 12s.	Wagons, harness, &c., at 1s. 6d. per horse.	Shoeing, medicines, &c., at 1s. 6d. per horse.	
1. General Commanding an Army Corps	...	8	42 0 0	14	£ s. d. 67 10 0	£ s. d. 150 0 0	£ s. d. 3 12 0	£ s. d. 1 0 0	£ s. d. 0 9 0	One 4-horse and one 2-horse wagon.
2. Commander of a Division	...	7	36 15 0	12	45 0 0	45 0 0	1 4 0	0 10 0	0 6 0	One 4-horse wagon.
3. Commander of a Brigade	...	5	26 5 0	8	22 10 0	22 10 0	0 12 0	0 10 0	0 3 0	One 2-horse wagon.
4. Chief of the General Staff of a Corps	...	5	26 5 0	10	45 0 0	12 15 0	—	0 10 0	0 6 0	One 4-horse wagon.
5. Senior Staff Officer of a Corps or Division	...	2	10 10 0	4	—	7 10 0	—	—	—	
6. Second or Third Staff Officer of a Corps	...	2	10 10 0	4	—	6 0 0	—	—	—	
7. First and Second Adjutant of a Corps	...	2	10 10 0	4	—	6 0 0	—	—	—	
8. Brigade-Adjutant...	...	2	10 10 0	4	—	5 5 0	—	—	—	
9. Third and Fourth Adjutant of a Corps	...	2	10 10 0	4	—	5 5 0	—	—	—	
10. Regimental Commander	...	3	—	5	—	12 15 0	—	—	—	
11. Battalion Commander	...	2	—	3	—	7 10 0	—	—	—	
12. Company Commander	...	1	—	2	—	6 0 0	—	—	—	
13. Commander of Headquarters Guard	...	2	10 10 0	3	—	4 10 0	—	—	—	
14. Regimental or Battalion Adjutant	...	1	—	2	—	3 0 0	—	—	—	Regimental Adjutant has 3 horses.
15. First Lieutenant of Infantry	...	—	—	—	—	3 3 0	—	—	—	
16. Second Lieutenant of Infantry	...	—	—	—	—	3 3 0	—	—	—	

Officers' Quarters.

As above stated, the large majority of German officers draw *Servis* and live out of barracks, but if quarters are provided in barracks they must be occupied by single officers. For a Captain these quarters consist of 2 rooms, 1 servant's room, 1 cupboard, 1 saddle closet, 1 kitchen; for a Subaltern 1 room and 1 cupboard, with a saddle cupboard in addition for an Adjutant or mounted officer. Officers living in barracks receive an allowance to provide small utensils as stated under *Servis*. It may be remarked that, in the new barracks in Germany, the officers' quarters are not in separate blocks or passages as in England, but open off the passages leading to the men's rooms. In large concentrations of troops and on the line of march, lodging accommodation for General Officers consists of 3 rooms and 1 servant's room; for field officers, 2 rooms and 1 servant's room, and for all other officers 1 room and 1 servant's room. The furniture of a room must include at least one bed, looking glass, table, chairs, washing apparatus, use of cooking utensils, &c.

Officers' Servants.

All officers of the standing army up to and inclusive of Brigade Commanders are entitled to have soldiers as servants, taken, as a rule, from the regiment or corps to which they belong. When officers are employed away from their regiments they must obtain servants from the regiments serving in their garrison.

Servants of all Staff and mounted officers and of those officers residing away from their regiments are absolved from duty; the men chosen for such employment must, however, be well acquainted with their drill and have taken part once in the autumn manœuvres. The servants of other officers are subject to such occasional drills as their Company Commanders think necessary.

Officers proceeding on furlough are permitted to take their servants with them if circumstances allow of it; but they are held responsible for their due appearance when required.

Forage Allowance.

The amount of a heavy, medium, and light ration is shown under the head of forage at the end of this chapter. Every officer is entitled to forage in kind for the number of chargers allowed to him by regulation. A greater number of rations can be drawn on payment with the consent of the War Minister. Officers of the active army are not obliged to draw their forage rations, but they may not dispose of them to others. A special allowance is given for forage rations not drawn. The following table shows the number and kind of rations to which each officer is entitled :—

Field or Peace Appointment.	Peace Establishment.		Field Establishment.	
	Heavy.	Light.	Heavy.	Light.
Corps Commander	8	—	14	—
Divisional Commander	6	—	12	—
Brigade Commander	5	—	8	—
Chief of the Staff of a Corps	4	—	10	—
Divisional Adjutant	3	—	4	—
Brigade-Adjutant	2	—	4	—
Regimental Commander	—	3	—	5
Battalion Commander.. .. .	—	2	—	3
Other Field Officer	—	2	—	3
Regimental Adjutant	—	2	—	2
Battalion Adjutant	—	1	—	2
Captain	—	1	—	2
Captain of Cavalry or Horse Artillery ..	3*	—	3	—
Lieutenant of Cavalry or Horse Artillery ..	2*	—	3	—

Rations and fuel &c. (in the Field).

Officers are only entitled to free rations from the day the army takes the field; up to that time they have to pay 6d. a day for their rations. In war time the ration for an officer is the same as that for a man. Detached officers who belong to no regiment or corps may draw a money allowance in lieu of the ration.

In bivouac, on manoeuvres, each officer of the rank of Captain or above is allowed 80 lbs., and each Lieutenant 20 lbs. of straw. Firewood for officers is included in the amount allowed per battalion, cavalry regiment, or battery.

Fund for the Support of Officers (Offizier-Unterstützungs-Fonds).

In every regiment there is a fund bearing the above name and destined to afford pecuniary assistance to such of its Captains of the 2nd class and Lieutenants as may require it. It is managed by a committee consisting of the senior officer of each rank.

Officers requiring assistance report to their immediate superior, who lays the matter before the Committee. On an advance being granted, the President may order monthly deductions to be made from an officer's pay, amounting in the case of a Second Lieutenant to 6s., of a First Lieutenant of infantry to 9s., and of a First Lieutenant of the other arms to 12s. If an officer has to go to a mineral or other cure on recovery from illness, he may receive an advance of 4l. 10s., and the same sum may be advanced to an officer on command to whom great expense is caused. In the event of fire or theft, half the value of the military effects lost may be advanced.

To replace a horse lost on duty a sum of 22l. 10s. may be advanced, and if a horse has been so injured that it has to be

* Weight according to the regiment to which they belong.

sold, 15*l.* is the maximum sum allowed. Various regulations limit the sums which may be advanced in other cases of loss of horses.

On an officer in poor circumstances being appointed to a regiment, he may receive from the fund 15*l.* to cover the cost of his equipment.

Part of each advance may be a gift and part repayable.

This fund is kept up by annual subventions from Government as follows:—

	£	s.	d.
For a regiment of infantry of 3 battalions (normal establishment)	36	0	0
For a regiment of infantry of 3 battalions (increased establishment)	45	0	0
For a regiment of infantry of 4 battalions (normal establishment)	48	0	0
For a regiment of infantry of 4 battalions (increased establishment)	60	0	0
For a battalion of rifles	15	0	0
For a regiment of cavalry	18	0	0
" field artillery of 11 batteries	37	0	0
" " " 9 batteries	31	10	0
" foot artillery	27	0	0
For the engineer and pioneer officers	248	0	0
For the railway regiment	57	0	0
For the train inspection	163	10	0

General Staff Fund (Generalstabs-Stiftung).

This fund was founded in 1877, by an Imperial Law, which placed at the disposal of the Emperor a sum of 15,000*l.* the net profits on the sale of the "Official History of the Franco-German War." This was formed by the Emperor into a fund with a view: (1) to aiding in the development of military science in the General Staff of the Empire, and (2) to giving pecuniary assistance to deserving officers of the General Staff or those who had lost their health in its service, a third of the annual revenue being devoted to this purpose. In 1884, the profits on the sale of the above work having reached the total of nearly 32,000*l.*, a further sum of 1,400*l.* *per annum* was added by the Reichstag to this fund with a view to enabling Staff Officers to travel abroad to study theatres of war, both with a view to further operations and to the compilation of histories of past wars. By the law of 12th April, 1888, the net profits on the sale of all works on Military History which may be published by the General Staff are to be devoted to this fund.

The Chief of the General Staff of the Prussian army administers this fund, assisted by a committee nominated by himself, which performs its work without remuneration. The above committee has the entire disposal of the fund and distributes the annual revenue as seems to it best.

B. OFFICERS ON THE NON-ACTIVE LIST.

Officers of the non-active list receive no pay when not on actual military service, but those officers of the Landwehr selected as Landwehr Company Commanders receive an allowance of 1*l.* 10*s.* a month to defray their travelling expenses in their district. When called up for training, non-active officers

receive free quarters, or the regulated allowance in lieu and the following scale of messing money:—

				s.	d.
Field Officers	..	..	..	12	0
Captains or Company Commanders	..			7	6
First Lieutenants	..	..	..	3	0
Second Lieutenants	..	..	..	2	6

And, in addition, if they leave the place to which they are called up for training, the allowance for detached duty is given to them, as also if they are quartered in hut barracks.

For each training, equipment money (*Equipirungs-Geld*) to the amount of 10*l.* 10*s.* for a Captain of cavalry, 7*l.* 10*s.* to a Captain of infantry, 7*l.* 10*s.* to a Lieutenant of cavalry, 6*l.* 15*s.* to a Lieutenant of field artillery or train, and 6*l.* to a Lieutenant of infantry is given.

Officers of the non-active list are bound to present themselves when called up at the headquarters of their Landwehr battalion without having a claim for compensation, but if ordered to another garrison they receive personal allowance for the journey to it from their own battalion headquarters. Those who live in another state or abroad as civil officials have the full cost of their journey refunded to them. Cavalry officers pay for the conveyance by rail of their horses. When called to attend Councils of Honour, officers of the non-active list receive travelling and personal allowance.

When called up for active service on mobilisation, officers of the non-active list are treated in exactly the same way as those of the active list.

C. MEDICAL OFFICERS AND OFFICIALS.

Medical officers receive in general the same pay and allowances as military officers of corresponding rank. Thus for pay, lodging allowance, and supplementary lodging allowances:—

A Surgeon-General of the Army ranks with a Brigade Commander.

A Surgeon-General ranks with a Regimental Commander.

A Surgeon-Major ranks with a Battalion Commander.

A Surgeon ranks with a Captain.

An Assistant-Surgeon ranks with a Lieutenant.

The actual pay of the last three ranks is slightly lower than those of the corresponding military ranks. The mobilisation allowance is in the first two cases smaller, and in the last three greater than those of the corresponding military ranks and no medical officer is allowed more than one horse on mobilisation.

The pay and allowances of officials are made up of pay, lodging allowance, supplementary lodging allowance, and, in some cases, of stable allowance, in the same manner as those of active officers. It will here be sufficient to show the maximum and minimum yearly pay and allowances of certain classes of these officials, which are as follows:—

Rank.		Pay.	Lodging Allowance.	Supplementary Lodging Allowance.	Remarks.
		£ s. d.	£ s. d.	£ s. d.	
Intendence Department.	Intendant (3 classes)	{ max. 412 10 0 min. 335 0 0	{ max. 66 18 7½ min. 37 16 0	{ max. 60 0 0 min. 36 0 0	
	Intendence Councillor (3 classes)	{ max. 270 0 0 min. 180 0 0	{ max. 48 12 0 min. 21 12 0	{ max. 46 0 0 min. 18 0 0	
	Assistant Intendant (5 classes)	{ max. 160 0 0 min. 90 0 0	{ max. 48 12 0 min. 21 12 0	{ max. 46 0 0 min. 18 0 0	
	Secretary (9 classes)	{ max. 165 0 0 min. 90 0 0	{ max. 27 0 0 min. 14 8 0	{ max. 27 0 0 min. 9 0 0	
	Assistant Secretary (3 classes)	{ max. 82 5 7½ min. 67 9 7½	{ max. 27 0 0 min. 14 8 0	{ max. 27 0 0 min. 9 0 0	
	Auxiliary Secretary (3 classes)	{ max. 82 5 7½ min. 67 9 7½	{ max. 27 0 0 min. 14 8 0	{ max. 27 0 0 min. 9 0 0	
	Office Employé (5 classes) ...	{ max. 112 9 7½ min. 82 5 7½	{ max. 27 0 0 min. 9 0 0	{ max. 27 0 0 min. 9 0 0	
	Subordinate Personnel	{ max. 60 0 0 min. 48 0 0	{ max. 12 0 0 min. 3 0 0	{ max. 12 0 0 min. 3 0 0	
	Chaplain General	{ max. 412 10 0 min. 240 0 0	{ max. 82 16 0 min. 65 13 7½	{ max. 60 0 0 min. 45 0 0	
	Army Corps Chaplain (5 classes)	{ max. 180 0 0 min. 130 0 0	{ max. 37 16 0 min. 48 12 0	{ max. 27 0 0 min. 45 0 0	
Military Law Department.	Divisional Chaplain (7 classes)	{ max. 105 0 0 min. 50 0 0	{ max. 21 12 0 min. 8 12 10	{ max. 18 0 0 min. 12 0 0	
	Verger	{ max. 50 0 0 min. 48 0 0	{ max. 4 9 7½ min. 3 0 0	{ max. 3 0 0 min. 3 0 0	
	Judge Advocate General	{ max. 685 0 0 min. 375 0 0	{ max. 82 16 0 min. 65 13 7½	{ max. 60 0 0 min. 45 0 0	
	Councillor to above	{ max. 280 0 0 min. 280 0 0	{ max. 65 13 7½ min. 65 13 7½	{ max. 60 0 0 min. 45 0 0	
	Corps Judge Advocate	{ max. 225 0 0 min. 255 0 0	{ max. 37 16 0 min. 48 12 0	{ max. 27 0 0 min. 45 0 0	
	Divisional or Garrison Judge Advocate	{ max. 106 0 0 min. 135 0 0	{ max. 21 12 0 min. 27 0 0	{ max. 18 0 0 min. 27 0 0	
	Paymaster	{ max. 82 5 0 min. 135 0 0	{ max. 14 8 0 min. 27 0 0	{ max. 9 0 0 min. 27 0 0	
	Corps Veterinary Surgeon	{ max. 120 0 0 min. 106 0 0	{ max. 14 8 0 min. 27 0 0	{ max. 9 0 0 min. 27 0 0	
	Chief Veterinary Surgeon	{ max. 70 0 0 min. 50 8 0	{ max. 14 8 0 min. 9 0 0	{ max. 9 0 0 min. 9 0 0	
	Veterinary Surgeon	{ max. 41 8 0 min. 38 1 0	{ max. 6 5 7½ min. 3 3 2½	{ max. 12 0 0 min. 3 0 0	
Military Law Department.	Armourer	{ max. 16 5 0 min. 16 5 0	{ max. 6 5 7½ min. 3 3 2½	{ max. 12 0 0 min. 3 0 0	
	Saddler	{ max. 16 5 0 min. 16 5 0	{ max. 6 5 7½ min. 3 3 2½	{ max. 12 0 0 min. 3 0 0	

Officials of the War Ministry, engineer, clothing, supply, and barrack branches, and those of the hospitals, remount dépôts, cadet schools, military prisons, and powder mills, receive pay and allowances on much the same scales as above. Those of the Garrison Administration receive quarters, fuel, and light from Government in kind, but are paid as the others.

Of the officials, only the Intendants of Army Corps, the riding instructors of the military riding school, and the paymaster of cavalry regiments have a right to horses and stable and forage allowances. Travelling allowance and office allowance are granted to officials on much the same scales as to officers.

Every paymaster or official in charge of a treasure-chest has to deposit a sum in the hands of Government as caution-money, which varies with the total of his pay and allowances.

D. NON-COMMISSIONED OFFICERS AND MEN.

Non-commissioned officers and men receive their pay (the month reckoned at 30 days) in advance, on the 1st, 11th, and

21st of each month. All allowances, inclusive of the additional ration money, are paid ten days in arrear. One-year volunteers receive no pay, but in case of actual need they may be paid as privates, should the Army Corps Commander think the case sufficiently deserving.

In the event of the death of a non-commissioned officer or man who has served his time and has re-engaged, his relations are granted the pay of the decade in which he died, and this may be extended to a further period of three decades. During this time the vacancy is kept open in the regiment.

Hospital stoppages are made from the pay of non-commissioned officers and soldiers during their period of treatment in hospital. These vary in amount from $3\frac{1}{2}d.$ in the case of a Sergeant-major to $\frac{1}{4}d.$ in the case of a private *per diem*.

The pay and money allowances of German soldiers are made up of :—

- (a.) Pay proper (*Löhnung*).
- (b.) Staff or detached pay (*Zulagen*).
- (c.) Compensation for dearness of provisions (*Verpflegungs-Zuschuss*).
- (d.) Breakfast allowance (*Frühstücks-Zuschuss*).

(a.) *Pay.*

The following are the monthly rates of pay in the various arms :—

The following increase over the pay of other troops of the same arm of the service is to be noted in certain regiments of the Guard:—

1st Foot Guards.—3*s.* a month for under-officers and above, 1*s.* 6*d.* for those below that rank.

2nd Foot Guards.—1*s.* 6*d.* a month for musicians, lance-corporals, and privates.

Guard Rifles.—3*s.* a month for lance-corporals and privates.

Guard Sharpshooters.—1*s.* 6*d.* a month for lance-corporals and privates.

Gardes du Corps Regiment.—3*s.* a month for musicians and above, 4*s.* 6*d.* for those below that rank.

Guard Cuirassiers, 1st Guard Dragoons, and Guard Hussars.—1*s.* 6*d.* a month for lance-corporals and privates.

Ensigns and tradesmen do not receive those increases.

From the pay, a deduction of 1½*d.* is made daily for messing, and the remainder is paid to the men in the presence of an officer.

As a rule, all under-officers are re-engaged men, and those who are not only receive lance-corporals' pay, with a monthly extra pay of 3*s.* Trumpeters of the cavalry, field and horse artillery, and train receive from the beginning of their fourth year of service 1*s.* 6*d.* extra a month.

Hospital assistants who have re-engaged receive 1*l.* 5*s.* 6*d.* a month, those on probation, and those who have not re-engaged, 15*s.* a month.

If a non-commissioned officer is reduced to the ranks, he receives the pay of his rank until the end of the decade in which his punishment is promulgated.

Re-engaged men may be allowed a furlough of 90 days without any deduction from their pay. As a rule, non-re-engaged men, if given furlough, receive no pay, but in exceptional cases they may be given furlough with pay for 8 days, and even, under very special circumstances, for 90 days.

Re-engaged men who have completed their period of service, and thereby gained the right to employment under the civil administration, receive a fixed rate of monthly pay, varying from 5*l.* for a Sergeant-Major to 2*l.* for a private, from the date of their discharge until they receive such employment. Such men are termed *Militär-Anwärter*.

In war, a monthly addition of 1*s.* 6*d.* is made to the pay of all men of the mobilised forces.

(b.) *Staff or Detached Pay (Zulage).*

Under this heading the following extra pay is given:—

One under-officer as clerk (*Schreiber*) in each regiment, battalion, or Abtheilung of artillery, per mensem 9*s.*

One under-officer as storekeeper (*Kammer-Unteroffizier*)* in each company or battery, per mensem, 3*s.*

* Termed Quartier-meister in the Artillery.

One under-officer as storekeeper in each squadron of cavalry,
per mensem, 4*s.* 6*d.*

One under-officer per company as musketry under-officer (*Schiess-Unteroffizier*), and one as Quartermaster-Sergeant (*Fourier*) each per mensem, 3s.

Drivers of field artillery, extra pay per mensem, 3s.

Drivers of horse artillery, extra pay per mensem, 1s. 6d.

The 120 best shots in a line rifle battalion, each per mensem, 3s.

'The 120 best shots in the Guard Sharpshooters, 1s. 6d.

Pioneers, working pay, per diem	<div> <div>1st class workmen, 8½d.</div> <div>2nd " " 6½d.</div> <div>3rd " " 3½d.</div> </div>
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Non-commissioned officers and men of the active army employed in training reserve and Landwehr men receive for each training as Sergeant-Majors and Assistant-Paymasters, 15s., and as under-officers, hospital assistants, trumpeters, buglers or drummers, 6s.

Men in garrison in Berlin, (except Lichterfelde), Potsdam, Charlottenburg, and the Castle of Hohenzollern, receive 1 pfennig ($\frac{1}{4}$ d.) a day extra.

Possessors of the following decorations receive extra monthly allowances, viz. :—

Military Good Service Cross (*Militär-Verdienst-Kreuz*), 9s.

Military Medal of Honour (*Militär-Ehrenzeichen*), 1st class,

Iron Cross, 1st class, 3s.

Iron Cross, 1st or 2nd class, together with 2nd class of the Military Medal of Honour, 6s.

If a royal bounty is granted to the troops after any review (*Revuegeschenck*) Sergeant - Majors and under-officers receive 1*s.*, lance corporals and privates, 6*d.* each.

(c.) *Compensation for Dearness of Provisions.*

This is given in addition to the breakfast allowance mentioned below. It is fixed every three months by Army Corps Commanders, and varies according to localities and the time of the year. In the budget, the average amount is taken at $1\frac{1}{2}d.$ per man, per diem, but it varies from $\frac{1}{2}d.$ in towns on the eastern frontier to $2\frac{1}{2}d.$ in the large towns in the west. This allowance is based on the average market price for the previous 3 months of a ration consisting of:—

5 $\frac{7}{8}$ oz. of uncooked meat.

$3\frac{4}{5}$ oz. of rice, or $4\frac{6}{5}$ oz. of groats, or $8\frac{1}{2}$ oz. of pulse, or
3 lb. $4\frac{9}{16}$ oz. of potatoes.

$\frac{7}{8}$ oz. of salt.

The remainder of the cost of this ration, or whatever is sub-

stituted for it, is met by the deduction of $1\frac{1}{2}d.$ a day from the soldier's pay, previously referred to. The mode of providing the daily meals is described on page 82.

(d.) *Breakfast Allowance.*

A sum of 3 pfennige (under $\frac{1}{2}d.$) per man per diem is allowed by government to provide a warm meal in the morning.

For under-officers both the above allowances are raised by one-half.

Other Money Allowances.

When troops are proceeding by rail or steamer each man receives the following allowance for refreshments:—

	s.	d.
For a journey of from 8 to 15 hours ..	0	3
" 15 to 31 " ..	0	6
" 31 to 39 " ..	0	9
" 39 to 47 " ..	1	0

and 3d. extra for every additional 8 hours.

Personal allowance (*Tage-Geld*) is granted to men proceeding alone on duty at the following daily rates:—

	s.	d.
Sergeant-Major, Vice-Sergeant-Major, or Ensign	4	6
Under-officer	3	0
Lance-corporal or private	2	0

When the above allowance is drawn, no rations in kind nor ration allowances are given to the man. It is never granted for more than 28 days, nor is it applicable to marches by stages nor to manœuvres.

For a journey by rail or steamer, an allowance of 1s. at the point of arrival and departure, and 7 pfennige (under 1d.) per kilomètre ($\frac{3}{4}$ mile) is made to cover expenses of baggage, &c. When proceeding by road, this allowance is $3\frac{3}{4}d.$ (30 pfennige) per kilomètre.

When changing garrison, the following allowances are given to married men:—

	Transfer allowance.	Travelling allowance for every 10 kilomètres ($6\frac{1}{4}$ miles.)
Sergeant-Majors, Vice-Sergeant-Majors	5l. 0s.	4s.
Under-officers, lance-corporals, privates, and re-engaged men	2l. 10s.	2s.

For unmarried men, the allowance for the above classes is 1l. and 15s. respectively for journeys under $233\frac{1}{4}$ miles, and 1l. 10s. and 1l. for those over that distance.

When men of the Reserve, Landwehr, Ersatz Reserve,

Seewehr or Landsturm are called up to serve on mobilisation or reinforcement of the army, their families are entitled to assistance if in indigent circumstances. The minimum allowance for the wife of a man in these categories is 6s. in the summer and 9s. in the winter months, while children and other relations who are dependent on him receive at least 4s. a month.

E. MEN'S RATIONS.

The only free ration of the soldier under ordinary circumstances consists of a daily ration of 1 lb. 10 $\frac{3}{4}$ oz. of brown bread (*Kommiss-Brod*).*

When the troops are located in permanent cantonments, during the first part of the manœuvres, they receive the bread ration and the usual money allowances, but while they are actually manœuvring and bivouacking they receive a ration in kind consisting of, in addition to the bread:—

13 $\frac{1}{2}$ oz. of uncooked meat, fresh or salt, or 7 oz. of smoked meat, bacon or sausage.

4 $\frac{3}{4}$ oz. of rice or groats, or 8 $\frac{1}{4}$ oz. of pulse or meal, or 3 lbs.

4 $\frac{9}{16}$ oz. of potatoes.

$\frac{7}{8}$ oz. of salt.

$\frac{7}{8}$ oz. of roasted coffee, or 1 oz. of raw coffee.

This is called the *Grosse-Viktualien-Portion*.

On the line of march the ration is provided by the person on whom the soldier is billeted, and usually the soldier simply eats with the family, but when any disputes arise the equivalent of 2 lbs. 3 $\frac{1}{4}$ oz. of bread, and the above ration of meat, vegetables, &c. may be demanded. For the ration is paid a sum which is fixed by general orders every year, and which varies between 10d. and 1s., including 1 $\frac{1}{2}$ d. for bread and 1 $\frac{1}{2}$ d. as the soldier's contribution.

In bivouacs during the manœuvres, each soldier receives 10 lbs. of straw and the following amount of firewood is issued:—

To a battalion of infantry or pioneers ..	343	cubic feet.
To a cavalry regiment	428 $\frac{3}{4}$	cubic feet.
To a battery	103	cubic feet.
To every guard .. .	17	cubic feet.

In the field all men are entitled to free rations. The field ration consists of, per diem:—

1 lb. 10 $\frac{3}{4}$ oz. of bread or 1 lb. 1 $\frac{3}{4}$ oz. of biscuit, (but if it is not possible to provide the meat ration, the bread ration may be raised to 2 lbs. 3 $\frac{1}{4}$ oz.).

13 $\frac{1}{2}$ oz. of uncooked fresh or salt meat, or 8 $\frac{1}{4}$ oz. of preserved meat, or 6 oz. of bacon.

*Bavarian troops receive only 1 lb. and a money allowance in lieu of the rest.

$4\frac{1}{2}$ oz. of rice or groats, or $8\frac{1}{2}$ oz. of pulse or meal, or 3 lbs.
 $4\frac{2}{3}$ oz. of potatoes.
 $\frac{7}{8}$ oz. of salt. *
 $\frac{7}{8}$ oz. of roasted or 1 oz. of unroasted coffee.

In bivouacs, and in the case of extraordinary exertions, Army Corps Commanders may order an extra ration of $3\frac{1}{2}$ oz. of brandy, and an increase to the vegetable ration. The ration of meat may also be raised to 1 lb. $1\frac{1}{2}$ oz., the rice or groats to $5\frac{1}{2}$ oz., or the potatoes to 5 lbs. Beer, butter, and tobacco are not supplied from magazines, and are not usually issued to soldiers, but they may be requisitioned, and in this case the ration is $1\frac{1}{2}$ pints of beer, $\frac{7}{8}$ pint of wine, $1\frac{1}{2}$ oz. of butter, $1\frac{1}{2}$ ozs. of tobacco, and $1\frac{1}{2}$ oz. of coffee. When travelling by rail or steamer the same allowance is issued as in peace. Each man carries an iron ration (*Eiserne Portion*) of three days' biscuit, bacon or preserved meat, rice or preserved vegetables, salt, and coffee. (See Part I, p. 345.)

The rations in the field are served out either in kind or in money, or partly in one and partly in the other. When rations are not drawn, $1\frac{1}{2}d.$ is the compensation for the bread rations, and $7\frac{1}{2}d.$ for the remainder.

Messing in Peace.

The messing fund of a battalion of infantry or pioneers, a regiment of cavalry, or an *Abtheilung* of artillery is formed of the $1\frac{1}{2}d.$ a day deducted from each soldier's pay, of the break-fast allowance, and of the compensation for dearness of provisions, together with the proceeds resulting from the sale of bones and refuse, and is managed by a Committee consisting of a captain, a lieutenant, 2 under-officers, and some lance-corporals and privates. The same Committee, less the lance-corporals and privates, manages the under-officers' mess, and the two under-officers must be dining members of it. The captain acts as President and controls expenditure, and the lieutenant superintends the subordinate *personnel*, tastes the food frequently, and controls the receipt of stores. The other members of the Committee represent the wishes of their comrades and watch their interests. The executive *personnel* comprises one under-officer in charge termed *Küchen Unteroffizier* and the necessary number of cooks (soldiers). The under-officer and cooks receive free rations from the mess, but no money remuneration. It is forbidden to save much money on the messing fund, the utmost allowed in a year being 9*l.* for every 100 men; the rest should be devoted to giving the men as good and abundant food as possible. In the event of any large sums having to be paid for utensils, &c., the battalion &c., Commander may authorise an advance to the fund of, at the outside, 45*l.* for every 100 men.

The under-officer in charge of the cook-house receives

every day from each company, squadron, and battery a statement of the number of men in mess on the morrow, and he then inscribes in the kitchen-book the number of rations to be prepared for each meal, and the total amount of each article to be drawn. This book is checked every day by the lieutenant on the Committee, and the number of rations for each company and the bill of fare for the day are posted up by the under-officer on a blackboard near the cook-house. Provisions are obtained either by direct purchase for single articles, or by contract, or by a combination of both, or by contract for the ration. The bills of fare and the daily rations vary greatly according to the nationality of the regiments, some preferring more meat, others more vegetables. In general, three meals a day are given, coffee in the morning, dinner with meat (generally about $\frac{1}{4}$ lb. per man) and vegetables at midday, and an evening meal of vegetables with herrings, sausage, &c.

The food of German soldiers is abundant and excellent, and great care is taken in its cooking. Everything is kept scrupulously clean, and a close supervision is exercised both by regimental and medical officers.

Canteens.

In each barrack a canteen is established with a view to supplying extra food, tobacco, beer, and small articles of kit to the men at the lowest possible prices. It may be managed either by the regiment or battalion privately or let out to a contractor. Only soldiers are allowed to be served in it, and no sitting down to eat or drink is allowed. The profits are spent entirely in the interests of the men, and a very usual way of disposing of a part of them is for a battalion to purchase a canteen wagon fitted up with barrels for beer and wine, boxes for tobacco, eatables, &c., which follows the battalion on manoeuvres or in the field. In the latter case it is purchased by Government and brought on the strength as one of the provision wagons.

F. FORAGE.

In peace there are four different kinds of horse rations, the difference between which consists in the amount of oats given. They are:—

The heavy ration	11 lbs. 7 $\frac{3}{4}$ oz. oats.	} And 5 lbs. 7 $\frac{1}{2}$ oz. hay, and 7 lbs. 10 $\frac{1}{2}$ oz. straw. F 2
The ration for light cavalry of the guard	10 lbs. 15 oz. oats.	
The medium ration	10 lbs. 11 $\frac{1}{2}$ oz. oats.	
The light ration	9 lbs. 13 $\frac{1}{4}$ oz. oats.	
(663)		

The above rations are drawn as follows:—

The Heavy Ration.—The horses of General Officers, the General Staff, Adjutants, Officers of the War Ministry, Cuirassier and Guard Lancer Regiments, Military Riding School, Guard Horse Artillery, and Field Officers of Guard Field Artillery, all artillery draught horses, those of the gendarmerie and intendance, and the draught horses of the train. Troop horses of the Gardes du Corps Regiment receive at all times 1 lb. 1½ oz. oats and 3 lbs. 4½ oz. hay extra.

The Ration for Light Cavalry of the Guard.—Guard Dragoons and Guard Hussars.

The Medium Ration.—Lancer regiments of the line.

The Light Ration.—All other troops and officers.

The above is termed the garrison ration (*Garrison-Ration*), and is only drawn for horses on the strength. The three or four “*Krümpers*” horses in each squadron, battery, and company of train have to be fed on the savings of the other horses’ rations. It is not compulsory to give the horses their full ration daily; part of it may be saved to be given at times when the animals have been called upon to make special exertions.

On the line of march the ration is increased as follows:—

Heavy ration	..	13 lbs. 3¾ oz. oats.	{ And 3 lbs. 1 oz. hay and 3 lbs. 13¼ oz. straw for feeding. [3 lbs. 4⅞ oz. hay and straw for the heavy ration] Bedding is given by the landlord of the billet.
Light guard cavalry			
ration	..	11 lbs. 7¾ oz. oats.	
Medium ration	..	11 lbs. 4½ oz. oats.	
Light ration	..	10 lbs. 6¼ oz. oats.	

This ration is increased all round by 8¾ oz. of oats in the field. Each horse then carries a day’s iron ration of oats.

During railway transport, each horse is allowed 3 lbs. 4½ oz. hay and 2 lbs. 3 oz. straw to strew on the floor and ramp of the wagon. If the journey lasts longer than 8 hours, 6 lbs. 9 oz. of hay is allowed extra for every 24 hours.

During army corps manoeuvres or cavalry division exercises for a period of 4 weeks, the following rations are allowed:—

For cuirassiers or horse			{ And 3 lbs. 4½ oz. hay and 3 lbs. 13¼ oz. straw, as on the march.
artillery draught horses	12 lbs. 14½ oz. oats.		
For other line cavalry			
regiments and horse			
artillery riding horses..	11 lbs. 7¾ oz. oats.		

CHAPTER V.

PENSIONS.

A. OFFICERS AND MEDICAL OFFICERS.

The pensions of officers of the German army are regulated by the law of the 21st April, 1886, which provides that, after ten years' service, if unfit for further active service, an officer may be granted a pension equal to $\frac{1}{3}\frac{1}{8}$ of his pay, the latter being calculated on the gross amount of his pay proper, command or staff pay, lodging and supplementary lodging allowance, and share of table money. After each year of service after the tenth, the pension increases by $\frac{1}{80}$ of the pay drawn for at least one year before the pension is granted. The total amount of the pension cannot exceed $\frac{1}{3}\frac{1}{8}$ of the pay drawn. This law has been applied to all pensions granted since the 1st April, 1882, and likewise to those of all the officers who took part in the Franco-German War of 1870-1, the result of which provision has been that a large number of elderly officers have retired, thus leaving the cadres younger. The former figures were $\frac{1}{3}\frac{1}{8}$ of the pay after ten years, with an increase of $\frac{1}{80}$ for every year over ten. The following table shows the various rates; for brevity those for every five years only being shown. The intermediate ones can be obtained by interpolation.

Every officer has a right to pension if he, after ten years' service, has become unfit for active duties, and he may be retired with the pension due after ten years' service before he has completed that period, if he has lost a limb or his health on duty. Reserve and Landwehr officers have only a right to pension if they have been wounded or have lost their health on duty.

Every officer who has become unfit for further active service in consequence of wounds received or health lost in the field has an addition (*Kriegszulage*) made to his pension at the following rate :—

Pension under 82*l.* 10*s.*, extra annual allowance, 37*l.* 10*s.*

Pension from 82*l.* 10*s.* to 90*l.*, total raised to 120*l.*

Pension from 90*l.* to 120*l.*, extra annnal allowance, 30*l.*

Pension from 120*l.* to 135*l.*, total raised to 150*l.*

Pension above 135*l.*, extra annual allowance, 15*l.*

In addition to the above, blood-money of 30*l.* a year (*Verstümmelungszulage*) is granted for the loss either of a hand, foot, eye, or the speech, or for any serious damage equivalent to their loss. This may be granted for injuries received in peace also, and the total blood-money allowed must not exceed 60*l.* per annum, unless the cause of pensioning be a wound or external injury.

Service towards pension counts from the day of entering the service (in any rank) to the date of the order retiring an officer, but no service under 18 years of age counts in peace; in war there is no limit of age.

For every campaign in which an officer has taken part, a year is added to his service towards pension, and for the campaign of 1870–71 two years are reckoned for those who were in the field the whole time. Time spent as a prisoner of war or as a prisoner in consequence of conviction by court-martial is deducted from service towards pension, but, exceptionally, time spent as a prisoner of war in France in 1870–71 is not so deducted.

If a pensioned officer loses his German nationality, is brought on to the active list again, or receives a post under Government, the pay of which, added to his pension, makes his total income greater than his pay and allowances when he left the service, the payment of the pension ceases.

Pensions are paid monthly in advance, and in the event of an officer's death his widow or heirs have a right to the following month's pension also. Widows of officers killed on active service or died of wounds or of disease contracted on active service receive a pension of 75*l.* a year for the widow of a General Officer, 60*l.* for that of a Field Officer, and 45*l.* for that of a Captain or Subaltern. The pension ceases one year after the lady marries a second time. For each child left by an officer dying as above, 7*l.* 10*s.* per annum is allowed up to the age of 17, or 11*l.* 5*s.* if the child is motherless also. If such an officer

was the only support of a father, mother, grandfather, or grandmother, each of these also receives 7*l.* 10*s.* a year.

Officers who have retired on a pension obtain, when again called up for active duty, a claim to the *Kriegszulage* mentioned above, if they subsequently sustain a wound or injury in the field which permanently incapacitates them from duty.

At 60 years of age, it is not necessary that an officer should be unfit for further active duty to entitle him to pension. Below this age, however, all officers not retired for wounds are bound to forward with their application for pension a declaration from their immediate superior that they are unfit for further active duty.

Employment of Pensioned Officers.

Pensioned officers who are so-called "half-invalids," that is, considered fit for duty in peace but not for active service, may receive appointments in the gendarmerie. An officer so appointed is placed on the lowest rate of gendarmerie pay without regard to his military rank, and rises in the gendarmerie by seniority. The lowest rate of pay is 150*l.* per annum, the highest 300*l.* and supplementary lodging allowance, horse allowance, and an allowance for the expenses of inspection journeys are also given. A married officer seeking employment in the gendarmerie must be able to prove possession of an annual private income of 67*l.* 10*s.*

The right to expect civil employment is given to selected officers by the Gazette which announces their retirement, and it is only conceded when officers have also a right to a pension. Pensioned officers can be employed in the prison, telegraph, or railway services, or in garrison or communal administrations. There are also 132 military post offices, the superintendents of which are retired officers who receive pay varying from 150*l.* to 210*l.* per annum. They must be physically fit for their duties and must deposit a caution-money of 45*l.* At first they are kept on probation for one year, and if the performance of their duties is satisfactory they are then made permanent and have to deposit a further caution-money of from 45*l.* to 405*l.*

B. NON-COMMISSIONED OFFICERS AND MEN.

Non-commissioned officers and men of the active army have a right to pension if—

- (1.) They have become unfit for service through injuries received on duty; or if
- (2.) They have become unfit for service of any kind (*Ganzinvalid*, or complete invalid) after 8 years' active service (campaigns counted double), or fit for garrison duty only (*Halbinvalide* or demi-invalid) after 12 years' active service; or if
- (3.) They apply for a pension after 18 years' active service, or (in the case of under officers who desire civil employment and who are well-conducted men) after

12 years' active service, without being unfit for further military duty.

Men of the reserve or Landwehr are only eligible for pension if they have received injuries on actual duty.

Men who, with less than 8 years' service, become unfit for further service or who, with less than 12 years' service, become unfit for service in the field, are simply discharged as unfit for service, unless the cause of their so becoming unfit is an injury received in the course of duty.

Service is reckoned in the same manner as for officers (see above), and the pension is calculated according to rank, degree of unfitness for service, and ability to earn a living. Pensions are divided into five classes and their monthly amounts are as follows:—

Rank on Discharge.	1st class.			2nd class.			3rd class.			4th class.			5th class.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Sergeant-Major ..	2	2	0	1	13	0	1	7	0	1	1	0	0	15	0
Sergeant ..	1	16	0	1	7	0	1	1	0	0	15	0	0	12	0
Under-Officer ..	1	13	0	1	4	0	0	18	0	0	12	0	0	9	0
Private ..	1	10	0	1	1	0	0	15	0	0	9	0	0	6	0

Pensions of the 1st Class are granted:—

- A. After a service of 36 years, proof of invalid condition not being required.
- B. (1.) To complete invalids after 25 years' service (campaigns counted double); or
- (2.) To men incapacitated by injury and requiring another person's assistance.

Pensions of the 2nd Class are granted:—

- A. After a service of 30 years, proof of invalid condition not being required.
- B. (1.) To complete invalids after 20 years' service (campaigns counted double); or
- (2.) To men incapacitated by injury from earning their living.

Pensions of the 3rd Class are granted:—

- A. After a service of 24 years, proof of invalid condition not being required.
- B. (1.) To complete invalids after 25 years' service (campaigns counted double); or
- (2.) To men rendered unfit for service by injury.

Pensions of the 4th Class are granted:—

- A. After a service of 18 years, proof of invalid condition not being required.
- B. (1.) To complete invalids after 12 years' service (campaigns counted double); or
- (2.) To those who have been partially incapacitated from earning their living.

Pensions of the 5th Class are granted:—

- A. (1.) To complete invalids after 8 years' service (campaigns counted double); or
- (2.) To complete invalids rendered so by wounds, external injuries on duty, or contagious eye diseases.
- B. (1.) To half invalids after 12 years' service (campaigns counted double); or
- (2.) To half invalids rendered incapable of active service in the field by wounds, external injuries on duty, or contagious eye diseases.

Those who have been made "complete invalids" by active service in the field receive a monthly addition to their pension of 6s. (*Kriegszulage*).

Those who, on duty, no matter whether in peace or in war, have become mutilated, rendered blind, or otherwise severely or permanently injured, receive, in addition to their pension, blood-money. Under this head 18s. a month is granted for the loss of a hand, foot, or eye, when the other eye is not perfectly sound, loss of speech, or damage to any limb equivalent to its loss. As a rule, the sum of these allowances is not to exceed 36s., unless the soldier has sustained the total loss of his sight.

Non-commissioned officers of and below the rank of Sergeant-Major discharged as complete invalids after eighteen years' service, are granted an addition to their pension of 1s. 6d. monthly for each subsequent year's service (*Dienstzulage*).

The amount of pension, exclusive of the blood-money, must not exceed the full pay of the rank which the pensioner held previous to his discharge.

In lieu of receiving pensions, complete invalids may, with their own consent, be placed in an invalid-house, provided there are vacancies. These institutions are more especially meant as nursing establishments for such men as require attention of this nature, and invalids are not allowed to remain in them after their health is sufficiently restored.

Semi-invalid non-commissioned officers may, in lieu of pension, if they so desire, be allowed to remain in active military service of such a nature as may not demand their proceeding on field service.

Soldiers degraded to the second class have no claim to maintenance as invalids, unless wounded before the enemy. Other soldiers of the second class, who have otherwise the qualifications for the first three classes of pensions, may, if in necessitous circumstances, be granted a pension not exceeding that of the third class.

Claims for pension must be preferred before the applicants are discharged from active service. Those men discharged from actual military service without having been deemed entitled to maintenance as invalids, but who subsequently

become complete invalids, may lay claim to such maintenance, irrespective of the time which may have elapsed, when the cause of invaliding is a wound or external injury sustained in the field, or a contagious eye disease contracted during active military duty, either in peace or in war. They may also lay claim to it at any period within three years after the conclusion of peace, when the injury has been sustained in the field, or within six months after discharge from active military service, when the invaliding is caused by an injury while on duty in peace.

In the same manner and under the same regulations as for officers, the widow of a Sergeant-Major receives a monthly pension of 27*s.*, of a sergeant or under officer 21*s.*, and of a private 15*s.* Up to its fifteen year, each child receives 10*s.* 6*d.* a month, or 15*s.* if the mother is dead also, and a father, mother, grandfather, or grandmother dependent on the deceased for support, 10*s.* 6*d.* a month.

Subordinate military officials, such as paymasters, farriers, saddlers, and armourers, have a right to pension if, after ten years' service, their state of health does not permit of their carrying on their duties, or if they are rendered unfit for service by wounds or other injuries received on duty. Their service towards pension only counts from the beginning of their twenty-first year, and after their sixty-fifth year they have a right to a pension even if still fit for service.

Employment of Pensioned Non-Commissioned Officers and Men.

Invalided soldiers, who are held to have claims from their good conduct, receive a recommendation for civil employment (*Zivilversorgungsschein*). Complete invalids receive this certificate in addition to their pension; demi-invalids are allowed a choice between it and their pension, but only when they have served at least twelve years. Non-commissioned officers, when not entitled as invalids to this recommendation, acquire a claim to it after twelve years' active service, provided their conduct has been uniformly good. Complete invalids from the war of 1870-71, who have claims to the recommendation, are allowed, at their option, an addition to their monthly pension of 6*s.* in lieu of it. Invalids suffering from epilepsy are not granted this recommendation, but if this disease be the result of an injury on duty they are granted an additional sum of 9*s.* monthly.

The civil posts to which pensioners are appointed are the gendarmerie, police in Berlin and Charlottenburg, military administrative branches, postal, telegraphic, railway, canal, road-repairing, customs, forest (lower posts only), and judicial services. For the gendarmerie and police, a previous military service of nine years (campaigns not counted double) is indispensable; as to the other services, preference is always given to military (or naval) pensioners.

Should the service income of a pensioner employed in a

civil capacity, after deductions for necessities, not be equivalent to double his invalid pension, exclusive of active service allowance and blood-money, the pensioner is allowed so much of his pension as will make up the double sum, otherwise the right to draw pension ceases on a civil post being accepted. When a pensioner is discharged from civil employ, and has not acquired a right to a civil pension, or only to one less than or equal to his military pension, the latter may be at once restored to him. If he has acquired a right in his civil capacity to a larger pension than his invalid pension, the latter is deducted and only the difference paid him from the civil funds. War allowance and blood-money are under all circumstances paid to the pensioner.

Thanks to these beneficent rules, by which the future of a good non-commissioned officer is secured, Germany succeeds in keeping trustworthy and experienced men in the ranks, and her non-commissioned officers are second to none on the continent.

CHAPTER VI.

MILITARY ESTABLISHMENTS.

THE establishments for maintaining and equipping the army may conveniently be divided into the following groups :—

- A. Artillery manufacturing departments.
- B. Small-arm and cartridge factories.
- C. Artillery depôts.
- D. Reserve depôts.
- F. Intendance establishments.
- F. Military prisons.
- G. Hospitals.

A. ARTILLERY MANUFACTURING DEPARTMENTS.

These establishments are, in Prussia, placed under the artillery section of the War Ministry, and in Bavaria under the Inspector-General of Artillery and Train. They are generally in charge of officers seconded from the foot artillery, who are assisted by officers of the Ordnance Corps, and by officer artificers. There are also a few civilian employes, and the entire subordinate *personnel* is civil. Every year, fourteen officers from the foot artillery are attached to these departments from the 1st September to the following 1st March, eight to the artillery workshops, and six to the gun foundry, to enable them to perfect their technical knowledge. Each establishment is presided over by an officer as Director, whose authority extends over all the *personnel* of the establishment, and who controls

expenditure. He is assisted by a Sub-Director, who presides over a Committee appointed to receive all materials, examine and pass them. An accountant in each is charged with the keeping of the accounts, and may be either a sergeant-major of the Ordnance Corps, or a civilian. If a third officer is attached as Assistant Director, he is a member of the Committee for receiving material, has charge of the library and plan room, and assists at trials. No officer has immediate charge of any branch of manufacture properly speaking, these duties devolving entirely on the civilian foreman or officer artificers. All manufactured articles before being issued from any establishment are passed by a board, consisting of the Sub-Director as President, the third (artillery) officer, and the foreman of works or officer artificer in charge of the workshops in which they were made.

It may here be remarked that Germany draws a large proportion of its ordnance and warlike stores from private firms, such as that of Krupp for guns and carriages at Essen, of Gruson for armour-piercing projectiles and armour plates at Bückau, and of Heidemann at Cologne and Duttchenhofer at Rottweil, for powder.

(a.) *Artillery Workshops (Artillerie-Werkstätten).*

In these workshops, gun and other carriages are repaired. There are four of them in Prussia, at Spandau, Deutz, Danzig, and Strassburg, one in Saxony, at Dresden, and one in Bavaria, at Munich. Each is under a field officer, as Director, with a captain as Sub-Director, and at Spandau and Munich, three, at Strassburg, one officer attached as Assistant Director. The remaining military *personnel* attached in Prussia consists of 5 captains, and 5 lieutenants, and in Bavaria of 3 lieutenants of the Ordnance Corps; at Dresden the *personnel* is united with that of the artillery *depôt*. To the Spandau workshops is attached a "constructional office," with 1 field officer as Director, and two other officers as Assistant Directors, and a lieutenant artificer attached.

(b.) *Laboratories (Feuerwerks-Laboratorien).*

There are two of these, at Spandau for Prussia, and at Ingolstadt for Bavaria. The staff of the Spandau laboratory consists of a field officer as Director, a captain as Sub-Director, a captain and 2 first lieutenants as Assistant Directors, 1 captain and two lieutenants of the Ordnance Corps, 2 captain artificers, and 1 lieutenant artificer. That of the Ingolstadt laboratory comprises 1 field officer as Director, 1 captain as Sub-Director, 1 lieutenant attached, 1 captain and one lieutenant of the Ordnance Corps, and 3 lieutenant artificers.

(c.) *Gun Foundries (Geschütz-Gießereien).*

The Prussian gun foundry is at Spandau, that for the Bavarian army, with which is incorporated a projectile factory, is at Ingolstadt. The former is in charge of a field officer as Director, with a captain as Sub-Director, 1 captain and a first lieutenant as Assistant Directors, 1 captain and 2 lieutenants of the Ordnance Corps, and 1 lieutenant artificer. The Bavarian establishment has a field officer as Director, a captain as Sub-Director, a lieutenant as Assistant Director, 1 lieutenant of the Ordnance Corps, and 1 lieutenant artificer.

(d.) *Projectile Factory (Geschosz-Fabrik).*

The Prussian projectile factory is at Siegburg, that for Bavaria is amalgamated with the gun foundry at Ingolstadt. The staff of the Siegburg factory consists of a field officer, a captain, and a first lieutenant as Director, Sub-Director, and Assistant Director respectively, a captain and a lieutenant of the Ordnance Corps, and a lieutenant artificer.

(e.) *Powder Mills (Pulver-Fabriken).*

There are two powder mills in Prussia, at Spandau and Hanau, one in Saxony at Gnaschwitz, and one in Bavaria at Ingolstadt. The Prussian establishments have each a field officer as Director, a major or captain as Sub-Director, a first lieutenant as Assistant Director, a lieutenant of the Ordnance Corps, and a lieutenant artificer. The Bavarian mill has no Sub-Director and no lieutenant artificer, and the establishment of the Saxon mill is included in that of the artillery dépôts.

(f.) *The Berlin Arsenal (Das Zeughaus).*

This establishment, situated on the Unter den Linden at Berlin, and in charge of a colonel, is simply a museum. It contains a museum of artillery, a collection of uniforms and equipment of the Prussian army at all periods, a fortress model room, and a large collection of war trophies, colours, &c. In the upper storey is a magnificent hall decorated with historical wall-paintings of memorable events in the history of the Prussian army, and busts of its most distinguished generals.

B. SMALL ARM AND CARTRIDGE FACTORIES.

(Gewehr und Munitions-Fabriken).

These factories are in Prussia under a special Inspector, a colonel of infantry, who has a staff of a captain as adjutant, a lieutenant, and two captains of the Ordnance Corps.

and who reports to the War Ministry ; that in Bavaria is under the Inspector of Artillery and Train. There are three factories in Prussia, at Spandau, Danzig, and Erfurt, and one in Bavaria, at Amberg. Each of the Prussian factories is divided into a small arm factory and a cartridge factory, both under the same Director, a field officer. At Spandau the small arm factory is under a captain as Sub-Director, with 3 first lieutenants as Assistant Directors, and 12 lieutenants attached from infantry regiments for duty. The cartridge factory has a captain as Sub-Director, a first lieutenant as Assistant Director, and 3 lieutenants attached. At Danzig and Erfurt the small arm factories have each a captain as Sub-Director, 2 first lieutenants as Assistant Directors, and 9 or 10 attached lieutenants. The cartridge factory at Danzig is in charge of a first lieutenant as Assistant Director with a lieutenant attached. That at Erfurt has a captain and a first lieutenant as Assistant Directors, and a second lieutenant attached. Of the Ordnance Corps, 4 captains and 5 lieutenants are attached to the various factories. The number of civil officials is 49, that of the subordinate employés 28, and that of workmen (civil) is fixed by the necessities of the moment.

The Amberg Factory is in charge of a field officer as Director, with a captain as his assistant, and a lieutenant attached, besides a captain and a lieutenant of the Ordnance Corps.

The lieutenants attached to the factories must have not less than 5 and not more than 8 years' service as officers, and must be good shots. Their period of command lasts one year. A certain number of officers are also attached for a four weeks' course in the factories, in the repair of small arms. On return to their regiments these officers act as inspectors of small arms.

C. ARTILLERY DEPÔTS.

(Artillerie-Depôts).

In the artillery depôts are kept the entire fortress artillery material, that portion of the field artillery material which is not, in peace, in charge of the batteries, the material for the reserve and depôt batteries, that of the ammunition columns, and ammunition of all natures, whether made up or not. The material for each battery, &c. is kept in the artillery depôt nearest its station or place of formation.

The artillery depôts are grouped into inspections in Prussia. At the head of these are colonels or lieutenant-colonels of foot artillery, whose duties are to superintend the administration of the depôt, and, in the case when the depôts are in fortresses, to prepare plans for the armament of those fortresses. To the staffs of each of those officers are attached two captains of the Ordnance Corps, and one captain or first lieutenant artificer. The artillery depôts in Saxony and Württemberg are under the

artillery brigades of the 12th and 13th Corps respectively, except that in the fortress of Ulm, which, being in an imperial fortress, is attached to a Prussian inspection. The depôts in Bavaria are under a special section of the department of the Inspector of Artillery and Train. The following is a list of the artillery depôts by inspections, names in brackets after that of any depôt indicating that a branch from that main depôt exists in the place named :—

1st Inspection. Headquarters, Posen, comprises territory of 3rd, 5th, and 6th Army Corps, and the fortress of Thorn.

Depôts: Thorn, Graudenz, Berlin, Cüstrin, Spandau, Glogau, Posen, Breslau (Schweidnitz), Glatz, Neisse (Cosel).

2nd Inspection. Headquarters, Stettin, comprises territory of 1st, 2nd, (excluding Thorn and Graudenz), 9th and 10th Army Corps.

Depôts: Danzig (Weichselmünde, Marienburg), Königsberg (Memel), Pillau, Boyen, Stettin (Colberg), Swinemünde, Rendsburg, Schwerin, Stade, Hanover (Brunswick, Oldenburg).

3rd Inspection. Headquarters, Cologne, comprises territory of 4th, 7th, 8th (except Saarlouis), and 11th Army Corps.

Depôts: Erfurt, Magdeburg, Torgau (Wittenberg), Münster (Minden), Wesel, Coblenz, Cologne, Cassel, Darmstadt, Mainz.

4th Inspection. Headquarters, Strassburg, comprises territory of 14th and 15th Army Corps, Saarlouis, and Ulm.

Depôts: Saarlouis (Trier), Karlsruhe, Rastatt, Neu-Breisach, Diedenhofen, Metz, Strassburg (Bitsch), Ulm.

Saxony (12th Corps). Depôt: Dresden.

Württemberg (13th Corps). Depôt: Ludwigsburg.

Bavaria. Depôts: Munich, Augsburg (Lechfeld), Ingolstadt, Gernersheim, Würzburg.

Each of these depôts is placed in charge of an officer of foot artillery. In fortresses, he is also the artillery officer of the fortress, in open towns, he is generally a captain detached from a foot artillery regiment and borne supernumerary to the establishment, (not seconded), for this purpose. All officers, 10 in number, thus employed in Prussia, are captains. To the Prussian depôts are also attached, in numbers varying according to their importance, 39 captains and 109 lieutenants of the Ordnance Corps, and 41 lieutenant artificers. In Saxony, the whole of the *personnel* of the artillery workshops and the artillery depôt at Dresden, and of the powder mill at Gnaschwitz, is under a major-general with a field officer of artillery as assistant, and comprises 3 captains and 6 lieutenants of the Ordnance Corps, 1 captain, and 3 lieutenant artificers. The Ludwigsburg depôt employs 1 colonel, 1 captain, and 2 lieutenants of the Ordnance Corps, and 1 captain artificer; the Bavarian depôts, 1 major, and 2 captains of foot artillery, 3 captains and 14 lieutenants of the Ordnance Corps, and 1 captain and 4 lieutenant artificers. The total number of non-commissioned officers of the Ordnance Corps in the Empire is

608, including 24 for Saxony, 14 for Württemberg, and 72 for Bavaria. Large fatigue parties are furnished from among the older soldiers of the infantry and artillery during the period of recruit drills for duty in the artillery depôts.

The regiments of the active army have by them in time of peace only the supply of small arms necessary for the peace establishment; the supply for the war augmentation as well as for the equipment of the garrison troops is kept in the artillery depôts. In those are also kept reserve supplies of arms for all the formations projected on mobilisation, with a large number to spare.

D. RESERVE DEPÔTS.

In these depôts, which are attached to and administered by the artillery depôts, are kept the stores and material for ten (two Bavarian) reserve ammunition parks (destined in war to fill up the ammunition columns from the reserve ammunition depôts), for four reserve ammunition depôts (at Torgau, Magdeburg, Erfurt, and Ingolstadt), and for the siege parks, which comprise in all 1,352 guns, although some of the latter are also comprised in the armament of the fortresses, with 1,000 to 1,200 rounds of ammunition for each.

The necessary material for forming three reserve pontoon trains is stored in peace in the fortresses of Coblenz, Danzig, and Magdeburg. These trains are only formed by special order when required.

E. INTENDANCE ESTABLISHMENTS.

(a.) *Garrison Commissariat Offices and Magazines.*

In most of the important garrisons there are commissariat offices and magazines for the purchase, storing, and preparation of bread and forage for the troops. Where such establishments do not exist, these articles are obtained by contract. The permanent magazines are divided into:—

(1.) *Principal Magazines (Proviant-Amt)*, with “Provision-Masters” (*Proviant-Meister*) at their head, assisted by controllers and assistant-accountants.

(2.) *2nd Class Magazines (Proviant-Amt, formerly Magazin-Rendantur)* with accountants (*Rendant*) in charge of them. They only differ from principal magazines in their size and the rank of the official in charge. They are completely independent of the principal magazines.

(3.) *3rd Class Magazines (Proviant-Amt, formerly Depot-Magazin-Verwaltung)* with assistant accountants at their head. They are only branches of the principal or 2nd class Magazines, in whose districts they are situated.

(4.) *Auxiliary Magazines*, generally in charge of civilians or retired non-commissioned officers, and filled with stores obtained by contract.

Temporary magazines are also established for manoeuvres.

Each principal or second class magazine has a certain district assigned to it, in which its staff manages not only the affairs of the 3rd Class and auxiliary magazines situated in it, but superintends all measures for the supply of the troops. According to the 1887 Army Lists, there were 62 principal, 45 second class, and 60 third class magazines, distributed as follows* :—

Guard Corps.—I. Berlin, Potsdam.

1st Corps.—I. Danzig, Königsberg, Tilsit, Allenstein, Graudenz. II. Insterburg, Riesenburg. III. Elbing, Stallupönen, Stargardt, Lötzen.

2nd Corps.—I. Stralsund, Stettin, Thorn, Bromberg, Colberg. II. Demmin, Pasewalk, Stolp. III. Treptow, Greiffenberg, Belgard.

3rd Corps.—I. Brandenburg, Frankfurt-on-Oder, Spandau, Cüstrin. II. Perleberg, Rathenow, Züllichau, Schwedt. III. Jüterbog, Fürstenwalde, Beeskow.

4th Corps.—I. Magdeburg, Erfurt, Torgau. II. Weissenfels, Wittenberg, Merseburg, Stendal, Halberstadt, Salzwedel, Mühlhausen. III. Quedlinburg, Langensalza, Naumburg, Gardelegen.

5th Corps.—I. Posen, Glogau. II. Lüben, Lissa. III. Sagan.

6th Corps.—I. Breslau, Glatz, Neisse. II. Schweidnitz, Militsch. III. Cosel, Ohlau, Ratibor, Strehlen, Namslau, Neustadt, Brieg, Grottkau.

7th Corps.—I. Düsseldorf, Münster, Wesel. II. Paderborn.

8th Corps.—I. Cologne, Saarlouis, Coblenz, Treves. II. Saarbrücken, Bonn, Jülich.

9th Corps.—I. Rendsburg, Schleswig. II. Ludwigslust, Parchim, Schwerin, Wandsbeck, Itzehoe. III. Flensburg, Neumünster, Stade.

10th Corps.—I. Hanover, Oldenburg, Brunswick. II. Lüneburg. III. Osnabrück.

11th Corps.—I. Darmstadt, Frankfurt, Mainz (see below), Cassel. II. Hofgeismar. III. Babenhausen, Butzbach.

12th Corps.—I. Dresden, Freiberg, Leipzig. II. Bautzen, Grossenhain, Oschatz. III. Borna, Geithain, Grimma, Königstein, Lausigk, Pegau, Pirna, Riessa, Rochlitz.

13th Corps.—I. Stuttgart, Ulm, Ludwigsburg. III. Weingarten, Wiblingen.

14th Corps.—I. Karlsruhe, Rastatt, Mannheim. II. Bruchsal. III. Konstanz, Freiburg.

15th Corps.—I. Hagenau, Strassburg, Metz, Colmar, Neubreisach, Diedenhofen. II. Saarburg, Saargemünd, St. Avold.

* In each army corps, the magazines "I" are principal, "II" second class, and "III" third class.

1st Bavarian Corps.—I. Augsburg, Ingolstadt, Munich, Neu-Ulm. II. Dillingen, Landshut. III. Burghausen, Fürstenfeld, Freising, Kempten, Landsberg, Lechfeld Camp, Lindau, Passau, Regensburg, Straubing, Schleissheim (Military Flour Mill).

2nd Bavarian Corps.—I. Gernersheim, Nürnberg, Würzburg. II. Amberg, Ansbach, Bamberg, Bayreuth, Landau. III. Aschaffenburg, Eichstätt, Erlangen, Neuburg, Speyer, Sulzbach, Zweibrücken.

At Mainz, there is a preserved meat factory, under a "Provision Master," which is said to be able to turn out 100,000 rations a day, if required.

(b.) *Garrison Administration Offices (Garnison-Verwaltungs-Wesen).*

In each garrison there exists a Garrison Administration, upon which devolves the superintendence of the barracks, guard-rooms and lock-ups, clothing stores, drill sheds, parade grounds, &c.

The troops of the garrison send their requisitions direct to the Garrison Administration with regard to all matters concerning barracks and barrack stores, and receive the supplies from that office.

The official in charge of each office is of higher or lower rank according to the importance of the garrison, there being four grades in the hierarchy of officials of this department, viz., Director, Chief Inspector, and Inspector of Garrison Administration, and Barrack Master. The Intendant of each corps superintends all the offices of this department in his district.

(c.) *Garrison Offices for Works (Garnison-Bauwesen).*

Offices of the Military Works Department exist permanently in the larger garrisons, and are established temporarily, when necessary, wherever extensive buildings have to be undertaken. As all military buildings, except fortresses, are constructed by civil engineers and civil labour, the Garrison Office for Works is only charged with the general superintendence of the money expenditure and the execution of the work. The offices in each town are in charge of Garrison Inspectors of Works, and all those in one Army Corps are under a Consulting Engineer of Works.

(d.) *Clothing and Equipment Depôts (Montirungs-Depôts).*

The greater number of the articles of clothing and equipment of the army are made up regimentally by the military

tradesmen, or purchased by private contract, and these depôts are only intended to store the cloth in before its issue to the troops, and to keep the reserves of clothing and equipment for special formations. There are five such depôts in Prussia, at Berlin, Graudenz, Breslau, Düsseldorf, and Strassburg, one in Saxony at Dresden, one in Württemberg at Heilbronn, and one in Bavaria at Ingolstadt. For all eight the establishment is only 28 officials and 42 porters and packers.*

F. MILITARY PRISONS.

In the Fortress Prisons (*Festungs-Gefängnisse*) men condemned by court-martial to imprisonment in a fortress are detained. There are 14 of them in all, 10 in Prussia, at Cologne, Danzig, Graudenz, Neisse, Posen, Rastatt, Spandau, Strassburg, Torgau, and Wesel, 2 in Saxony, at Dresden and Königstein, 1 in Württemberg, at Ulm, and 1 in Bavaria, at Oberhaus. Officers and non-commissioned officers are appointed to these from the line or the establishment of demi-invalids.

To the Disciplinary Divisions (*Arbeiter-Abtheilungen*) are sent men who have mutilated themselves voluntarily, those who, before entering the army, have lost their civil rights, and the soldiers of the second class who are considered incorrigible. There are 3 such divisions in Prussia, at Ehrenbreitstein, Königsberg, and Magdeburg, 1 in Saxony, at Königstein, 1 in Württemberg, at Ulm, and 1 in Bavaria, at Ingolstadt. The Guard Corps has also two Disciplinary Divisions for men undergoing punishment, the first at Spandau, the second at Coblenz. Each is in charge of a captain or first lieutenant, with a lieutenant attached for duty and a varying number of non-commissioned officers on command from their regiments for from a year to eighteen months.

The Fortress Prisons and Disciplinary Divisions are under an Inspector, a field officer, who has a lieutenant as Adjutant.

G. HOSPITALS.

(*Lazarethe*).

Hospitals are classified into garrison and regimental hospitals, the former being the rule, the latter the exception. In cases of epidemics, auxiliary hospitals may be opened, and during the manœuvres cantonment or camp hospitals may be established. Every garrison has usually a garrison hospital, and Berlin has two such.

For administration and general supervision there is appointed for each hospital a Hospital Committee composed of a combatant officer and a medical officer, and, in very large hospitals,

* It is proposed to have one clothing and equipment depôt for each Army Corps, each with a staff of 1 retired field officer, 1 retired captain, 2 officials, and 3 porters and packers.

of a Hospital Inspector (an Intendance official) in addition. The Hospital Committees of an army corps are subordinate to its Corps Intendant and Corps Surgeon-General; the Committee investigates all complaints with regard to the material issued, sees that order and cleanliness prevail, and that the articles on charge are appropriated to their proper uses.

All soldiers of the standing army, Landwehr cadres, and invalid establishments, men on leave "at the disposal of their corps," reservists proceeding to their homes, and recruits are received into and treated free of cost at the hospitals, also those who have been discharged from their regiments for contagious disease of the eyes, provided that they have a relapse within a twelvemonth of such discharge.

Patients in hospital are generally classed into three divisions: 1st. those with external injuries, 2nd. those with internal diseases, 3rd. those with ophthalmia and venereal diseases, and those again are formed into sub-divisions, generally by regiments, if two or more regiments send their sick to the hospital. The minimum of cubic air space for each patient is 762·00 cubic feet (22·25 cubic metres).

CHAPTER VII.

SYSTEM OF ADMINISTRATION.

A. FOOD AND FORAGE.

The Intendance Department of each army corps takes all the necessary steps for supplying the "Intendance Magazines" with food stores and forage, and determines whether the contract system or that of direct purchase is to be adopted for each. The powers of the Corps Intendant are very extended, and the action of the Minister of War is confined to laying down general rules and determining the composition of the reserves of food and forage. Supply by contract is the rule, the contracts being usually drawn up for the delivery of certain articles for a certain time at a fixed price. When direct purchase is the system adopted, the purchases are made by a committee consisting of a controller and the head of the magazine concerned, the latter being responsible for the quantity and quality of the supplies furnished, and payment being only made on his declaration that those are satisfactory. The reserves of food and forage kept in fortresses liable to be besieged and required to meet the exigencies of mobilisation are the subject of special orders from the War Ministry, which are kept secret. Bread and forage are the only articles usually furnished to the troops from the Intendance Magazines, the remainder of the men's rations, as stated in

Chapter IV, being arranged for regimentally. Bakeries are attached to the magazines, and in them bread is baked by soldier bakers, but the employés in the magazines themselves are hired civilians.

B. PAY.

Each battalion, regiment of cavalry, or *Abtheilung* of artillery has a paymaster who keeps all the accounts, but the treasure-chest is managed by a committee (*Kassen-Kommission*) of two or three officers, each of whom has a key, and the chest can only be opened in presence of all of them. It is kept in the quarters of the Commanding Officer, who is then personally responsible for it, or in a guard-room in a locked up place. The Commanding Officer is president or 1st member of the committee, and the 2nd member sees that the paymaster enters all receipts and expenditure daily and keeps all books up to date. One officer, besides the paymaster, must always be present at the receipt of sums over 300 marks (15*l.*). Small sums are paid by the paymaster out of an advance left in his hands by the committee, but large sums can only be issued in the presence of all its members. Monthly advances for current expenditure may also be given to Company Commanders. The men are always paid in the presence of an officer.

C. CLOTHING.

The German army is clothed entirely under arrangements made regimentally, the only articles supplied to regiments from Government stores being cloth and mess-tins. The Regimental Commander is entirely responsible for the clothing of his men, and the executive power is vested in committees. Every regiment has such a committee, named *Regiments-Bekleidungs-Kommission*, composed of the field officer of the regimental staff as president, and one or two officers and the paymaster as members. The duties of this committee are to manage the clothing fund and the purchase, storing, making up, and distribution of new articles of equipment. Each battalion or *Abtheilung* of artillery has a Battalion or *Abtheilung* Clothing Committee composed of a captain, a lieutenant, and the paymaster, the duties of which are to store and keep in good order all the articles in the battalion, &c., store; to distribute clothing and equipment to the companies, and to keep the accounts with those latter. The last link in the chain is the Company, Squadron, or Battery Commander who looks after the clothing in his own store. In the cavalry, the intermediate battalion committee does not exist, and its duties are performed by the regimental committee.

The clothing fund is formed in the following manner. A period of wear is fixed for each article of clothing or equipment, and from time to time a price for it is fixed by the War

Minister. Given then the number of articles to be kept up for each man, it is easy to calculate the sum required per annum. This varies, of course, with the prices fixed for the articles, but may be taken at from about 2*l.* 10*s.* for a soldier to about 4*l.* 5*s.* for a Sergeant-Major. The sum total of these, together with the allowances for the band and the fifes and drums, constitute the clothing fund, which is administered by the regimental clothing committee, and to which may be added the small sum gained by the sale of unserviceable articles. A second fund, also administered by the regimental committee, is called the General Fund (*Allgemeine Unkosten*) and is formed by an allowance of 2*s.* 8*d.* per man per annum. Of this five-sixths are made over to the companies for repairs and the remainder is added to the clothing fund.

The regimental committees receive the cloth they require from government stores free of charge for carriage (although its value is deducted from the sums issued to the regiment), and the mess tins from the train depôts, but all other articles are bought in the trade, and, wherever possible, from German tradesmen. Some articles, such as helmets, belts, cartridge pouches, &c., are bought ready made, the materials only for the others are purchased, and the articles are then made up in the regimental shops.

The *personnel* of these shops consists of men recruited regularly as tradesmen (*Ökonomie-Handwerker*), but not included in the numbers of the annual contingent. A battalion of infantry, foot artillery, or pioneers, on the increased establishment has 16, one on the lower 12 such tradesmen, a cavalry regiment 20, an *Abtheilung* of artillery 9, and a train battalion 10. They join about the 1st October of each year, so as to get the clothing of the recruits ready, and get their own military instruction (which is very elementary) completed before the arrival of the contingent. If extra work is to be done, men may be taken from the ranks. In addition to their ordinary pay, these men receive a small sum for every article or batch of articles made up by them. Materials are issued to the various workshops of each trade once a week, and the work is superintended by a master workman in each shop. Each article is examined by a member of the clothing committee, who is responsible that it agrees with the government pattern, and it is then marked and passed into the regimental store, from which it is issued to the other stores as required.

Every company (squadron or battery), battalion (or *Abtheilung*), and regiment has its own clothing store. In these are kept:—

(a.) *In the company stores:*

1. Field uniform and equipment (*Kriegs-Garnitur*), consisting of entirely new articles for all the men on the peace strength of the company. These may only be touched on mobilisation, and thus a German soldier

takes the field *entirely* clothed and equipped with new articles.

2. A parade uniform (tunic, trousers, and forage cap) (*Parade-Garnitur*) for each man of the peace strength of the company. This is only worn on great parades, or in cases such as when men are placed as guards of honour or sentries over the houses of high dignitaries.
3. A Sunday uniform (tunic, trousers, and forage cap) (*Sonntags-Garnitur*), which is issued to the men to walk out in on Sundays or holidays, and is also worn on ordinary reviews.

(b.) *In the Battalion Stores :*

Clothing and equipment entirely new and complete in every respect for the reserve men who could be called up to join the battalion on mobilisation. These are renewed periodically, as will be explained below.

(c.) *In the Regimental Stores :*

1. The clothing and equipment, entirely new and complete in every respect, for the men of the reserve and *Ersatz* Reserve, who would form in war the *depôt* battalions, squadrons, or batteries, or the reserve squadrons of cavalry.
2. The clothing and equipment as above, for the various Landwehr formations depending on the regiment.
3. The reserve store to equip any formations extra to the above. In it were formerly kept complete clothing and equipment for two companies in each infantry regiment. The plan of mobilisation is in Germany kept very secret, but it appears more than probable that this store now contains complete equipment for a fourth battalion when the regiment only has three active battalions, and does not exist in those with four.

In addition to the three uniforms kept in company, squadron, or battery stores, each man has a complete equipment and small kit, and two suits of uniform (tunic, trousers, and forage cap) in his own possession. The best of these is called the duty uniform (*Dienst-Garnitur*), and is worn on ordinary duty and parades outside barracks. The other (*Haus-Garnitur*) is only worn inside barracks and for fatigues.

The system pursued for the renewal of these various uniforms is as follows :—

On the 1st of January of each year, all the articles ready for distribution are handed over to the Landwehr or *depôt* stores from which a corresponding number of articles are withdrawn and distributed to the battalions as the equipment for the reserves. The battalions, in their turn, hand over to the companies an equivalent number of uniforms or sets of equipment, which then become the first or field uniform of the men of the

company. Each uniform then descends one place in the scale, the last year's field uniform becoming the parade uniform and so on. The former fifth, or *Haus-Garnitur*, is used for repairs to the others or as clothing for recruits on joining, or for reserve men called up for training, or, if quite unserviceable, is sold. Men on leaving the service take with them a tunic, pair of trousers, forage cap, shirt, pair of drawers, and pair of boots, all worn out articles. Recruits on joining only receive their *Dienst-Garnitur* after they have been a week in the service, and the Sunday uniform is only issued to them after they are sufficiently set up to wear it properly. Many regiments have even more than five suits of uniform per man. If a sufficient amount of care is taken, the duty uniform may be made to last as such for two years, and thus the men become possessors of two sets of Sunday uniforms which, of course, may then be more frequently worn, and thus the appearance of the men is improved. In this, as in all other matters, Company Commanders are given *carte-blanche*.

The accounts of the clothing fund are kept by the Paymaster, and are verified every two years by a Committee of Inspection, composed of a General Officer and an Intendance Official, who also check the whole system of supply, and see that everything is according to pattern. Army Corps Commanders have also to inspect the clothing stores.

Saddlery and harness are provided in the same manner as clothing, by the mounted branches.

On demobilisation after a war, steps are immediately taken to fill up all the stores and re-class all clothing, and, if regimental resources are insufficient, extra tradesmen are allowed by Government.

D. ARMS AND WARLIKE STORES.

These are either manufactured in the various military establishments (see Chapter VI), or purchased by contract from private firms.

CHAPTER VIII.

DISCIPLINE.

ALL persons belonging to the army are subject to discipline; in time of war, all persons who are present with the army, no matter in what capacity, and prisoners of war come under the provisions of the articles of war.

A. SUMMARY PUNISHMENT.

Summary punishment can only be inflicted for offences against good order and military discipline which have no provision made for them in the military code, and for mild forms the following crimes :—

1. Absence without leave and overstaying furlough.
2. Want of respect to a superior.
3. False statement on a point of duty.
4. False accusation against a superior.
5. Disobedience of an order.
6. Abuse of military power by borrowing money or receiving a present from an inferior without permission.
7. Maltreatment of an inferior.
8. Damaging, destroying, or selling kit, stores, arms, &c.
9. Minor irregularities on guard or sentry.
10. Leaving a guard without permission.
11. Quirting the ranks without permission.
12. Drunkenness on duty or after being warned for duty.

The following are the various natures of summary punishment:—

a. Men.

Non-commissioned officers:—

1. Reprimand.
 - a.* Simple—In presence of a superior.
 - β.* Formal—Before the whole of the assembled officers and non-commissioned officers of the company, squadron, or battery.
 - γ.* Severe—By publishing it in garrison orders.
2. Performance of certain duties out of turn, such as extra guards, &c.
3. Confinement.
 - a.* Arrest in barracks or quarters (open arrest), not exceeding four weeks.
 - β.* Medium arrest (in guard-room or lock-up), not exceeding three weeks.

Privates (including lance-corporals):—

1. Minor punishments.
 - a.* Performance of extra guards, extra parades, extra duties in the barracks, stables, quartermaster's stores, or on the ranges, answering name at roll-call in a particular dress.
 - β.* Deprivation of control over pay, and handing it over to an under-officer to expend at a given rate for 4 weeks.
 - γ.* Obligation to return to barracks or quarters at a given hour before tattoo for a period of 4 weeks.
2. Confinement.
 - a.* Arrest in barracks or quarters (open arrest="confinement to barracks") up to 4 weeks.
 - β.* Medium arrest (guard-room or lock-up) not exceeding 3 weeks.
 - γ.* Close arrest (cells) up to 14 days.

3. For lance-corporals, in addition, reduction to the ranks.
4. For privates of the second class, when the above punishments have been found of no avail, removal to a disciplinary division.

b. Officers.

1. Reprimand.

- a.* Simple—Privately, or in the presence of a superior.
- β.* Formal—Before his assembled brother officers.
- γ.* Severe—By publishing it in general orders.

2. Arrest in quarters up to 14 days.

Power of punishment is only delegated to officers commanding bodies of troops, or holding an independent command, or in charge of a military institution, and is limited to those immediately under their orders. The power is not personal, but devolves upon the individual holding the office. Officers other than those mentioned and non-commissioned officers have no power of punishment, but their duty, in case of necessity, is to place the delinquent under arrest, and report the matter immediately to the officer responsible for discipline.

Every officer entrusted with disciplinary powers has the right to reprimand officers both simply and formally, in the case of non-commissioned officers to put in force the punishments under sub-headings 1 and 2 for their rank, and to inflict upon privates those mentioned in sub-heading 1 for their rank.

Besides these general powers, Commanding Officers are granted the following special powers :—

a. Judicial powers of officers commanding companies, squadrons, and batteries :—

1. Over non-commissioned officers and privates.

Arrest in barracks or quarters up to 8 days.

2. Over non-commissioned officers under the rank of ensign and privates.

Medium arrest up to 5 days.

3. Over privates.

Close arrest up to 3 days.

b. Judicial powers of the commander of a battalion, where the regiment is present, or of an *Abtheilung* of field or horse artillery :—

1. Over non-commissioned officers and privates.

Arrest in barracks or quarters (open arrest) up to 14 days.

2. Over non-commissioned officers below the rank of ensign and privates.

Medium arrest up to 10 days.

3. Over privates.

Close arrest up to 7 days.

4. Over officers.

Arrest in quarters, but he must immediately seek the decision of the commander of the regiment, as to the duration of the same.

c. Judicial powers of the commander of a regiment or independent battalion, of a Landwehr District Commander, or of an officer holding similar rank :—

1. Over officers.

a. Severe reprimand.

β. Arrest in quarters up to 6 days.

2. Over non-commissioned officers and privates.

Open arrest up to 4 weeks.

3. Over non-commissioned officers below the rank of ensign and privates.

Medium arrest up to 3 weeks.

4. Over privates.

Close arrest up to 14 days.

5. Reduction of lance-corporals to the ranks.

d. Field officers and captains holding independent commands are authorised to inflict the following punishments, in addition to those above-mentioned as belonging to every officer entrusted with disciplinary powers :—

1. Upon officers.

a. Severe reprimand.

β. Arrest in quarters up to 3 days.

2. Upon non-commissioned officers and privates.

Open arrest up to 14 days.

3. Upon non-commissioned officers below the rank of ensign and privates.

Medium arrest up to 10 days.

4. Upon privates.

Close arrest up to 7 days.

Subaltern officers holding independent commands have the same powers as regards non-commissioned officers and privates, but they may not punish officers by arrest. Such officers must be reported to their own Commanding Officers.

e. Judicial powers of officers of superior rank to the foregoing :—

General Officers commanding army corps have the power of placing privates of the second class in a disciplinary division.

Officers can be awarded arrest in quarters by—

1. The General Officer commanding the army corps up to 14 days.

2. A divisional commander, a governor or commandant of a fortress of the first class up to 10 days.

3. A brigade commander, commandant of an open town or fortress of the second class up to 8 days.

Persons belonging to the reserve or Landwehr can only be summarily punished when on actual military service, except in cases of absence from control-musters, disobedience of orders, or when, on matters of duty or in uniform, they are wanting in respect or are untruthful to their superiors or calumniate them, or treat their inferiors improperly, or abuse their power over them to borrow money or accept presents from them. In those cases, disciplinary power is exercised over them by the Landwehr battalion district Commander. The punishment for any irregularity committed during a control-muster or other duty for which no pay or allowances are granted, must not exceed 3 days open or medium arrest. Offences in respect of failing to report changes of address, &c. may be punished with imprisonment of from 1 to 8 days, with an alternative fine of from 1s. to 3s. The punishment is ordered by the battalion district commander, and is carried out by the civil authorities. Officers of the reserve or Landwehr not on actual service can only be awarded arrest in quarters up to 6 days for offences similar to the above.

No person subject to military law can be summarily punished for a crime committed over three months previous to the award. This only applies to crimes easy of proof, and not to such as require to be made the subject of judicial enquiry. In the event of a crime, which should have been brought before a court-martial, having been disposed of summarily, it is still open to the authorities to try the committer of the crime by court-martial.

On active service, a man punished with medium arrest may be called upon to perform extra fatigues, and spends his time off duty in charge of the guard. Those punished with close arrest may be tied up to a tree or wall so that they can neither sit nor lie down, or may be made to carry a weight of 30 lbs. on one shoulder, or unequally divided on both shoulders, walking or standing still, for 2 hours a day. On the 4th, 8th, and every third following day these latter punishments may not be inflicted.

An officer exceeding his powers of punishment or awarding undeserved or unauthorised punishments may be imprisoned up to five years. An officer or other person intentionally neglecting to punish when a punishment is prescribed, is liable to imprisonment up to 6 months.

B. COURTS-MARTIAL AND COURTS OF INQUIRY.

(1.) *In Peace.*

The Judge Advocate's Department is the highest tribunal of military law, and the Deputy Judge Advocates and registrars are placed under its authority. The courts which are under the department are corps, divisional, regimental, garrison, and (in

war only) line of communication courts (see below). Besides the staff at headquarters, there is for every army corps a Deputy Judge Advocate (*Ober und Corps Auditeur*), for each division an Assistant Judge Advocate (*Divisions-Auditeur*), and for the more important garrisons an official of similar rank (*Garnisons-Auditeur*), besides a small number of registrars. In addition, in every infantry and rifle battalion, there is a lieutenant as investigating officer, who is entrusted with the conduct of judicial proceedings.

All military persons without distinction are subject to military jurisdiction, also all officers on the half-pay, unattached, or pension lists, when actively employed. Military jurisdiction is either superior or inferior. Courts of superior jurisdiction take cognisance of the offences of:—

- (1.) Officers.
- (2.) Sergeant-Majors, Vice-Sergeant-Majors, and Ensigns, if a more severe punishment than arrest is prescribed by the code for the offence.
- (3.) Non-commissioned officers below the rank of Ensign and privates, if a more severe punishment than arrest, reduction, or degradation to the 2nd class is prescribed.

To courts of inferior jurisdiction belongs the punishment of non-commissioned officers and privates for all offences which are not taken cognisance of by those of superior jurisdiction. The various courts mentioned above have jurisdiction as follows:—

Regimental courts can only exercise inferior jurisdiction over those on the establishment of the regiment.

Divisional courts are authorised to exercise superior jurisdiction over all the troops within the division, and inferior jurisdiction over those troops doing duty in the division which have no regimental court.

Army Corps courts have the power of superior jurisdiction over all troops in the corps which do not come under the jurisdiction of a division, and of inferior jurisdiction over all troops not subject to a regimental court.

Garrison courts have both superior and inferior jurisdiction. All persons employed in the commandant's office, those under arrest or confinement, and prisoners in the disciplinary divisions (*Arbeiter-Abtheilungen*) come under the jurisdiction of these courts, which deal exclusively with offences against public order and safety in the garrison, or with breaches of the regulations concerning the works of the fortress or irregularities in garrison duties.

Whenever a breach of discipline is brought to the notice of an Officer Commanding an army corps, division, &c., he calls for a statement of the facts and circumstances from the delinquent's immediate commanding officer. The preliminary investigation

is then conducted in consultation with the Deputy Judge Advocate, and a decision is noted on the minutes as to whether the proceedings are to be stopped or to be continued, and if the matter is to be brought before a regimental or a higher court-martial, or is to be dealt with summarily by the offender's immediate commanding officer. If a formal inquiry is determined upon, it must be decided whether the prisoner is to be arrested or if he is to remain under arrest.

The Court of Inquiry consists of the Deputy Judge Advocate or the investigating officer and one or two other officers, according to the rank of the prisoner and the gravity of the offence. The officers are responsible that order is observed during the proceedings and that the evidence is taken down correctly.

When the investigation is concluded, the commanding officer convenes the court-martial, which is a general or regimental court according as the nature of the offence comes under superior or inferior jurisdiction.

Both descriptions of court-martial consist of five ranks of members, the President forming one of the ranks, and the Deputy Judge Advocate or investigating officer acting as referee (assessor). The following is the constitution of a garrison, corps, or divisional court-martial:—

Rank of Accused.	Field-Marshal.	General.	Lieutenant-General.	Major-General.	Colonel.	Lieutenant-Colonel.	Major.	Captain.	First Lieutenant.	Second Lieutenant.	Sergeant.	Under-Officer.	Private.
Private	—	—	—	—	—	—	P	2	2				3
Under-Officer ..	—	—	—	—	—	—	P	2	2			3	—
Lieutenant ..	—	—	—	—	—	P	2	2	2	2		—	—
Captain	—	—	—	—	P	2	2	2	2	2		—	—
Major or Lieut.-Colonel ..	—	—	—	P	2	2	2	2	—	—		—	—
Colonel	—	—	P	2	3	2	2	—	—	—		—	—
Major-General ..	—	—	3	3	3	} And a General of superior rank as President.							
Lieut.-General ..	—	3	3	3	—								
General, &c. ..	3	3	3	—	—								

Grave offences entailing capital punishment or imprisonment for life, require three members of each rank in addition to the President.

A regimental court is composed of a captain as President, 2 first lieutenants, 2 second lieutenants, 2 under-officers, and 2 privates. If the prisoner be a non-commissioned officer, the latter two classes are replaced by two sergeant-majors, ensigns, or sergeants, and two under-officers.

When the requisite number of members has assembled, the

prisoner is asked by the Deputy Judge Advocate or Investigating Officer if he objects to any of the members of the court. If no objection be raised to any of the members, or if the objection be over-ruled or settled, the President reminds the members of the responsibility of their office, and in the case of a garrison, corps, or divisional court* the Deputy Judge Advocate administers the oath. After the members are sworn, the proceedings of the Court of Inquiry are read by the Deputy Judge Advocate or Investigating Officer, and the prisoner is asked if he wishes to add anything to them. The accused is allowed, in all cases, to hand in a written defence. In civil crimes, for which the prescribed punishment exceeds three years' imprisonment, the accused may be defended by a lawyer. In military crimes, the defence can only be entrusted to another person, who must in all cases be in the military service, when the punishment for the offence is death or imprisonment exceeding ten years. This terminates the proceedings in the presence of the prisoner, and he is removed. The Deputy Judge Advocate then addresses the court on the circumstances of the case, explains the law bearing on the offence, and gives his opinion upon the finding.

The finding and sentence are then taken by ranks, the lowest commencing, and the decision of each rank is given to the Deputy Judge Advocate to be recorded. Should the finding of any rank or member vary essentially from the opinion of the Deputy Judge Advocate, the reason of such difference is to be stated. If the finding is clearly at variance with the law, the Deputy Judge Advocate must endeavour to get it corrected, and, if unsuccessful, he must enter on the proceedings the opinion which he deems at variance with the law, and the reasons adduced for holding it.

For a legal sentence, an absolute majority is necessary. If this cannot be obtained by the opinions given, the vote for the most severe punishment is to be counted with the next less severe, until a majority is obtained. The same rule applies to the votes of each rank. If a rank consists of only two members and these differ in opinion, the less severe sentence is to be taken.

The members are then informed of the sentence by the President of the court, and they must keep it secret until it is promulgated. Recommendations to mercy must be supported by the vote of the majority.

The sentence requires to be confirmed to render it legal. All sentences of garrison, corps, or divisional courts-martial upon officers require the confirmation of the Sovereign. The sentences of regimental courts-martial are confirmed by the officer who convened the court, those of higher courts-martial by the divisional or corps commander, according to the degree of the sentence. The sentence may not be increased by the confirming officer, neither can he remit punishment below the authorised

* The members of a regimental court are not sworn.

minimum, nor can he commute it except in cases laid down in the military code. The sentence is made known to the prisoner (promulgated) after due confirmation, and the punishment is forthwith carried into effect.

(2.) *In War.*

The military laws and regulations in time of war take effect from the day of mobilisation and cease on the day of demobilisation.

Superior jurisdiction is exercised in each army corps by the general commanding, the commanders of divisions, and the commander of the corps artillery. Inferior jurisdiction is administered as prescribed by the military code.

On the entry of the troops into the enemy's country, the General Commanding gives notice of the district being placed under martial law. In this proclamation it is distinctly notified that the punishment of death will be inflicted upon all spies, and those who harbour them, those who act as guides to the enemy, or who mislead German troops when acting in that capacity, those who kill, wound, or plunder German soldiers, destroy bridges or canals, break up roads, interrupt railway or telegraphic communication, set fire to ammunition, commissariat, or other carts, or who take up arms against the German army.

The general commanding an army corps has power to convene courts-martial, to decide as to the competency of military courts, to suspend or dismiss officials, to order death by shooting, to pardon in certain cases men found guilty of cowardice, or of participating in a military disturbance, and to restore soldiers from the second to the first class.

When the conduct of the commander of a regiment, or of a Royal Aide-de-Camp becomes the subject of investigation, the officer commanding the army corps is authorised to suspend the offender or place him in arrest, but will report the circumstance to the Emperor.

At courts-martial, two officers of each rank, besides the President, form the members.

With regard to the judicial powers of the lines of communication authorities, the Inspector of each Line has the same disciplinary powers as an army corps commander in the field, and the same powers of confirming, remitting, &c., sentences. He exercises superior jurisdiction over all persons in the departments of the lines of communication, and the intendance, medical department, telegraph and postal services, which belong to Imperial headquarters.

The Inspector of Lines of Communication appointed for each army has also the powers of a commander of an army corps in the field. He exercises superior jurisdiction over all soldiers, &c., employed on his lines, who do not belong to a particular regiment or corps, and also inferior jurisdiction when such persons are not subject to a regimental court.

A Station Commandant has the disciplinary powers of a commandant of a second class fortress, and, in those cases where a Judge Advocate forms part of his staff, both superior and inferior jurisdiction.

C. CRIMES AND PUNISHMENTS.

The Articles of War (*Kriegs-Artikel*) prescribe punishments for the various crimes as follows:—

Article 5. Desertion on active service—Death, or penal servitude for five years at least.

6. Leaving a post on active service, or deserting from a besieged fortress, or deserting to the enemy—Death.

7. Desertion in peace—Degradation to the second class and imprisonment for six months at least; in certain cases penal servitude for five years at least.

8. Conniving at desertion—In peace, arrest or imprisonment up to six months; on active service, imprisonment for from one to three years.

9. Inciting others to desert, if successful—In peace, imprisonment for from six months to two years; on active service, imprisonment from five to ten years, and under special circumstances degradation to the second class.

10. Absence without leave—Imprisonment, or detention in a fortress, up to five years.

11. Maiming or injuring self or another in such a manner as to produce unfitness for service—Degradation to the second class and imprisonment from one to five years.

12. Lying to avoid duty—Imprisonment, or detention in a fortress, up to five years, and under special circumstances, degradation to the second class.

14. Cowardice in action, and taking to flight—Death.

15. Cowardice previous to, or during, or after, an action, throwing away or damaging arms, &c., &c.—Penal servitude for life, or a lower number of years.

17. Disrespect to superiors—Arrest, or in grave cases imprisonment, or detention in a fortress up to three years. Insult to superiors—Imprisonment, or detention in a fortress up to five years.

18. Disobedience of orders—Arrest. Disobedience entailing bad consequences for the service—Close arrest for fourteen days at least, or imprisonment or detention in a fortress up to ten years, or, on active service, for life.

19. Disobedience in such a manner as to show wilful defiance of authority—Close arrest not under fourteen days, or imprisonment, or detention in a fortress up to three years; or, on active service, imprisonment, or detention in a fortress for from ten years to for life; or death.

20. Threatening superiors in the execution of their duty, or preventing them in it—Imprisonment, or detention in a fortress

for from six months up to ten years; or, on active service, imprisonment for not less than two years.

21. Assaulting a superior—Imprisonment, or detention in a fortress for at least three years; in more serious cases, imprisonment, or detention in a fortress, or penal servitude for at least five years. On active service, on duty, death; not on duty, imprisonment, or detention in a fortress, for from ten years to for life. Every superior, on being assaulted by an inferior, or to enforce his orders in extreme necessity in pressing danger, is authorised to make use of his arms.

23. Making a false complaint—Arrest or imprisonment, or detention in a fortress up to one year.

24. Exciting discontent at duty among others—Arrest or imprisonment, or detention in a fortress up to five years.

25. Inciting others to mutiny—Imprisonment for at least five years, in graver cases, for at least ten years; on active service, from ten years to for life.

26. Mutiny—Treated as a graver case under Article 25. Knowing of and omitting to report an intended mutiny—Arrest or imprisonment, or detention in a fortress up to three years.

27. Making or causing a military riot—Degradation to the second class, and imprisonment for at least five years; on active service, for at least ten years. Leaders of such a riot, penal servitude for from five years to for life; or, on active service, death. If actually before the enemy, death for all the participants.

28. Disrespect to a guard or sentry—The same as disrespect to superiors in Article 17.

29. Causing collective complaints to be made—Arrest or imprisonment, or detention in a fortress up to three years. Those who take part in or sign such complaints may be imprisoned, or detained in a fortress up to six months.

30. Plundering—Arrest or imprisonment, or detention in a fortress up to three years, with, in graver cases, degradation to the second class.

32. Making unauthorised requisitions, &c., on active service—Degradation to the second class, with imprisonment up to five years; or, in graver cases, penal servitude for from ten years to for life, or death.

33. Destruction of property on active service—Arrest or imprisonment or detention in a fortress up to two years; in graver cases, as for plundering.

34. Straggling and marauding on active service—Imprisonment for from six months to five years, with, in special cases, degradation to the second class, and penal servitude up to ten years.

35. On active service, robbing a sick or wounded man or prisoner of war—Penal servitude up to ten years.

36. Improper use of arms—Imprisonment, or detention in a fortress up to one year (and any higher punishment to which the effect of the crime renders the person liable).

38. Destroying, damaging, or selling arms, or equipment—Arrest, or imprisonment, or detention in a fortress up to two years, and, in graver cases, degradation to the second class.

39. By careless handling of arms, wounding anybody—Arrest, or imprisonment, or detention in a fortress up to three, or if death ensues, up to five years.

40. Falsifying reports—Imprisonment from six months to three years, and degradation to the second class.

41. Accepting bribes, &c.—Penal servitude up to five years.

42. Quitting a guard, or a place in the ranks without leave—In peace, arrest; on active service, medium or close arrest or imprisonment up to six months. In the case of a commander of a guard or body of troops, in peace, medium or close arrest for at least fourteen days, or imprisonment up to three years; on active service, imprisonment for at least three years; or, in the actual presence of the enemy, death.

43. Sleeping, smoking (when forbidden), or lying down, or laying down arms, or leaving a post when on sentry—In peace, medium or close arrest for at least fourteen days, or imprisonment, or detention in a fortress for from three to fifteen years; before the enemy, imprisonment, or detention in a fortress for from ten years to for life, or death.

44. Neglecting to repress irregularities as commander of a guard—As in Article 43.

45. Letting prisoners escape—Medium or close arrest for at least fourteen days, or imprisonment, or detention in a fortress up to five years; in graver cases, degradation to the second class. If through negligence, arrest or imprisonment or detention in a fortress up to six months.

47. Abuse of military power or maltreatment of inferiors—No specific punishment.

48. Indebtedness, drunkenness, gambling, absence at night, or offences against good order and military discipline—No specific punishment.

48. Drunkenness on duty—Medium or close arrest, or imprisonment, or detention in a fortress up to a year.

50. Stealing or embezzlement—Medium or close arrest or imprisonment up to five years; in graver cases, degradation to the second class.

51. Appropriating eatables, drink, tobacco, or cleaning materials belonging to a comrade—No specific punishment.

52. In extraordinary circumstances, an officer can proclaim in peace that the provisions of the Articles of War for active service are to be applied to those under his command.

The following extracts regarding punishments and the execution of sentences are from the Imperial Military Code (*Reichs-Militär-Straf-Gesetzbuch*), dated June 20th, 1872:—

Clause 14. Sentence of death is to be carried out by shooting for a military offence, and also for crimes other than military if committed in the field.

15. If a soldier has been sentenced to deprivation of liberty

either before or after his entry upon his duties, such imprisonment will be carried into effect by the military authorities. If, by the enactments of the German civil code, the prisoner is liable or is sentenced to hard labour, he should be employed on military works and under military supervision. Non-commissioned officers and privates under sentence of imprisonment may, if desirable, be employed outside the establishment in which they are confined. If sentenced to penal servitude or to discharge from the army or navy, or any other punishment involving release from military service, the prisoner is handed over to the civil authorities to undergo his sentence.

16. Deprivation of liberty may be either imprisonment, detention in a fortress, or arrest, and may either be for life or for a stated period, the limits of which are from one day to 15 years.

17. Confinement, for a period exceeding 6 weeks, consists of imprisonment or detention in a fortress, and, for a shorter period, of arrest. If extenuating circumstances justify the reduction to less than one year of a sentence of penal servitude, imprisonment for the same length of time is to be substituted.

18. Any period of deprivation of liberty of over six weeks is not counted as service in the army or navy.

19. Arrest consists of arrest in quarters, open, medium, and close arrest.

20. Arrest in quarters is applicable to officers, open arrest to all non-commissioned officers and privates, medium to sergeants, under-officers, and privates, close arrest only to privates.

21. When imprisonment is prescribed by the Articles of War, the choice lies, according to the length of punishment, between imprisonment in an ordinary prison, detention in a fortress, and arrest.

22. When arrest is prescribed, its description is determined by the rank of the prisoner. If a particular kind of arrest is prescribed for an offence and it is inapplicable to the prisoner on account of his rank, he is to be sentenced to the next description of arrest compatible therewith.

23. Arrest in quarters is to be undergone at the prisoner's place of abode. He may not leave it during his arrest, nor is he allowed intercourse with others. Captains and subalterns may be sentenced to arrest in a special officers' guard-room (severe arrest).

24. Open, medium, and close arrest are passed in solitude. The maximum amount of close arrest is not to exceed four weeks.

25. Medium arrest is of such a nature that the prisoner has a hard board for a bed and bread and water as food. On the fourth, eighth, twelfth, and every third day afterwards he receives his usual food and bed.

26. Close arrest is similar to the above but is passed in a dark room. On the fourth, eighth, and every succeeding third day these severities are not enforced.

27. If the state of a prisoner's health is such as to preclude

his undergoing close or medium arrest, a milder form of arrest is inflicted.

29. Where the civil code allows the option of inflicting a fine or confinement, the former punishment is not permitted when a military duty has been neglected.

30. The punishment for offences involving loss of honour to which combatants are liable is in all ranks of the army and navy, dismissal or degradation, viz. :—

- (1.) For officers, dismissal from the service.
- (2.) For non-commissioned officers and privates, degradation to the second class.
- (3.) For non-commissioned officers, reduction to the ranks.

31. Discharge from the army or navy accompanies in all cases the sentences of non-commissioned officers and men to penal servitude and also those of forfeiture of civil rights, when such forfeiture is for a term exceeding three years.

In the case of officers, sentence of dismissal must be pronounced :—

- (1.) When condemned to penal servitude, or to the loss of civil rights without regard to the period of their forfeiture.
- (2.) In cases where non-commissioned officers and privates would be degraded to the second class.

Officers may be sentenced to dismissal from the army or navy and to imprisonment for more than five years in all cases in which non-commissioned officers and privates may be placed in the second class.

32. Dismissal from the army or navy carries with it as a consequence :—

- (1.) Loss of rank and the accompanying distinctions, also all rights acquired by military service so far as they can be taken away by the sentence.
- (2.) Permanent loss of orders and decorations.
- (3.) Inability to re-enter the army or navy.

33. Pensioned officers must be sentenced to deprivation of title and not to dismissal from the service. With this loss follow, as a matter of course, those consequences mentioned in Clause 32, paragraphs 2 and 3, as also the loss of the right to wear uniform.

34. Dismissal from the service must be awarded :—

- (1.) When the prisoner is deemed ineligible to hold any public office.
- (2.) Where reduction is compulsory, in the case of non-commissioned officers.

Dismissal from the service may be awarded in conjunction with :—

- (1.) Confinement for more than one year; or

(2.) Where reduction is allowable, in the case of non-commissioned officers.

37. If a soldier forfeits his civil rights for a period of less than three years he is placed in the second class. Degradation to the second class may be awarded:—

(1.) In case of the repetition of an offence.

(2.) If the sentence is for theft, assault, robbery, extortion, receiving stolen goods, fraud, or forgery, even if the loss of civil rights does not follow.

38. Soldiers who have been twice sentenced and punished for a military crime, may, if sentenced for a third time, be placed in the second class in addition to any imprisonment. The same may be awarded when a soldier, already once sentenced by a court, has been several times summarily dealt with, and is again under trial for the second time for a military offence. This additional punishment cannot, however, be awarded if six months have elapsed between the last offence and the commission of the crime under investigation.

39. Degradation to the second class entails the permanent loss of orders or decorations; further, the offender is not allowed to wear the military cockade, and loses all claim to maintenance on discharge, so far as the latter can be taken away by the sentence.

40. Reduction to the ranks must follow:—

(1.) Imprisonment for more than one year.

(2.) Degradation to the second class.

(3.) Sentence of inability to hold public offices.

Reduction to the ranks may follow:—

(1.) Imprisonment for one year or less.

(2.) Repetition of offences.

(3.) Offences of the nature of those mentioned in Clause 37, heading 2.

41. Reduction carries with it the loss of all service gained as a non-commissioned officer.

42. If a person on furlough is sentenced during his furlough to penal servitude, or to loss of civil rights, or to inability to hold public offices, those punishments involving loss of military honour, to which, according to the enactments of Clauses 30 to 40, he would be liable, follow of necessity. If a person is sentenced during his furlough for an offence of the nature mentioned in Clause 37, heading 2), the military judicial authorities must determine whether he is to be dismissed or reduced to the ranks.

The following enactments as to the nature of degradation to the second class and of detention in a fortress are taken from the regulations for the execution of military punishments.

Soldiers of the second class may not wear badges gained for service in the Instructional Battalion or at the School of

Musketry. They may not be placed on guards of honour or on guards over the colours, or on barrack-gate guards, or on guards over ammunition. Those of the Guard Corps sentenced to degradation to the second class are placed in the disciplinary divisions of the Guard Corps.

Detention in a fortress consists only of deprivation of freedom and superintendence of occupation and mode of life. Where the code prescribes imprisonment or detention in a fortress, the latter punishment is usually awarded to officers, sergeant-majors, one-year volunteers, and aspirant officers, the former to the other ranks. The rooms in which they live are not locked up and each person may, as a rule, take five hours' exercise daily within the limits of the fortress and, with the permission of the Commandant, receive or pay visits. They may not, however, appear in public places of amusement, promenades, or in society.

Imprisonment is always carried out in a fortress or garrison prison.

D. COURTS AND COUNCILS OF HONOUR.

Courts of Honour are instituted for the purpose of clearing the honour of those to whom no other course is open than an appeal to their decision, and also of guarding the honour of the cloth by taking proceedings against any of its members whose conduct does not appear to be compatible with honourable sentiments and the position of an officer. Besides the Courts of Honour (*Ehrengerichte*), there is in each regiment a Council of Honour (*Ehrenrath*), and every officer who has become involved in a difficulty with another is bound, either personally or through a comrade, to notify the circumstances to it, at the latest, as soon as he has given or received a challenge. The Council of Honour must at once, and if possible before the commencement of the duel, report to the Commanding Officer, and, in cases where such a course is permissible, attempt a reconciliation; in the event of this being unsuccessful, it must take care that the conditions of the duel are not out of proportion to the gravity of the quarrel. Should a duel occur, the president or a member of the Council of Honour has the right to be present in order to see that it takes place in a regular manner, and to decide upon its duration.

Duelling, although forbidden by the law of the land, still remains the only customary means of settling private and serious quarrels between German officers. They may, however be tried by court-martial for fighting a duel.

The following are subject to Courts of Honour:—

1. All officers of the active army.
2. All officers of the reserve and Landwehr, and those who, though retired from the army, are still liable to serve.
3. All unattached officers of the army.
4. All officers of the gendarmerie.

5. Pensioned officers or those who have retired with permission to wear uniform.

Courts of Honour are of two kinds—one for the trial of captains and subalterns, which is composed of all the brother officers of the accused, the other for the trial of field officers, formed of selected officers of that rank. With respect to the trial of general officers, Royal Aides-de-Camp, &c., special instructions are issued in each case by the Emperor.

A regimental Court of Honour of the former class consists of the whole of the brother officers of the accused under the superintendence of the commanding officer. In the case of field officers, a general officer is chosen to take the place of the commanding officer, and nine field officers, with nine substitutes, are chosen annually on the 1st September by the field officers of the army corps. All differences between officers of inferior grades and field officers are investigated before these latter courts.

The Councils of Honour are composed of, for the trial of a captain or subaltern, a captain, a first lieutenant, and a second lieutenant; for that of a field officer, of a colonel, a lieutenant-colonel, and a major, the senior of each court being President. The members are chosen yearly, on the 1st September, and elected by a majority of the votes of the officers of their own rank, and of all those of superior rank in the regiment. An officer of each rank in waiting is also elected. A detached battalion, &c. has a special Council of Honour. These councils have to investigate all matters affecting the honour of officers, and they have also to assist with friendly advice those comrades who turn to them in questions of this nature.

Every officer has the right to bring to the notice of the council or of the immediate commanding officer of the offender, any deed of commission or omission on the part of an officer of the German army or navy, which may be prejudicial to the honour of the individual or of the cloth. It is the duty of the council to report the circumstances to their commanding officer who, after hearing their report, will decide whether the matter is to go further or not, and what form the proceedings are to take. If the commanding officer thinks that the matter requires investigation, he reports it to the officer commanding the troops, who is authorised to order the same. He also directs whether the officer is to be suspended from duty or not. In the case of field officers, the order for investigation can only be issued by the general commanding the army-corps, and, in that of commanders of regiments, only with the Emperor's sanction. The commanding officer is held responsible for the proceedings, and gives all necessary instructions to the council. The investigation is conducted in writing, and the officer accused may either make his own defence, verbally or in writing, or depute another officer to make it for him. Witnesses who are German officers are not sworn. Should it be

desirable to administer the oath to other witnesses, a civil or military court must be convened for the purpose.

When the preliminaries before the Council of Honour are concluded, the commanding officer convokes the Court of Honour, which must consist of not less than nine members, including himself, and informs them fully upon the circumstances of the case, so as to give them the means of coming to a decision. The members are not sworn, but are placed upon their honour. The proceedings of the Council of Honour are then read, up to which time the accused may be present. Each member of the court then gives his verdict by word of mouth to the Council, which has to prepare a report upon the whole matter, in which any differences of opinion on the part of any individual member must be noted, and that part of the report countersigned by him.

The verdict of the Court of Honour may be to the following effect :—

1. That they are incompetent to try the case.
2. That the investigation should be gone into more fully.
3. That they acquit the accused.
4. That the accused is guilty of endangering the honour of the cloth, for which they may recommend that he should be reprimanded.
5. Guilty of damaging the honour of the cloth, with a recommendation that he should be allowed to retire from the service; or
6. Guilty of damaging the honour of the cloth, under aggravating circumstances, with a recommendation of dismissal from the corps of officers.

For a legal sentence, it is necessary that more than half of the members should be of the same opinion, and that at least nine members should vote. If a majority is not obtained, the most severe sentence is counted with the next less severe, until such is attained to. In case of equality of votes, the commanding officer has a casting vote.

The next step taken is for the Council of Honour, under direction of the commanding officer, to put the sentence of the court into the form of a judgment. This, together with the proceedings, is then sent through the officer commanding the troops to the Emperor for his final decision, which, together with the sentence of the court, is then communicated to the accused.

E. CIVIL PROSECUTIONS.

All officers, non-commissioned officers, soldiers, and their families have, in matters of civil jurisdiction, a special tribunal in the court of justice of their garrison town.

CHAPTER IX.

THE FORTRESSES.

By an Army Order of 25th November, 1886, the works on the Lower Weser, and by an Order of 4th December, 1887, those on the Lower Elbe (except Grauerort), were transferred from the jurisdiction of the War Office to that of the Admiralty, and this is said to be only the commencement of a system under which the defence of all the coast batteries and harbour defences of the Empire are to be similarly so transferred. As, however, this measure has only partially been carried out, it will be convenient to class all fortified points together in this chapter.

For administrative and inspectional purposes, the German fortresses are classed into eleven inspections as follows:—

- 1st. Headquarters, Königsberg. Königsberg, Pillau, Memel, Boyen.
- 2nd. Headquarters, Danzig. Danzig, Colberg, Swinemünde, Stralsund.
- 3rd. Headquarters, Posen. Posen, Glogau, Neisse, Glatz.
- 4th. Headquarters, Berlin. Spandau, Magdeburg, Torgau, Cüstrin.
- 5th. Headquarters, Mainz. Mainz, Ulm, Rastatt.
- 6th. Headquarters, Metz. Metz, Diedenhofen (Thionville), Bitsch.
- 7th. Headquarters, Cologne. Cologne, Coblenz, Wesel, Saarlouis.
- 8th. Headquarters, Kiel. Sonderburg-Düppel, Friedrichsort (Kiel), Cuxhaven, Geestemünde, Wilhelmshaven.
- 9th. Headquarters, Thorn. Thorn, Grandenz, Marienburg, Dirschau.
- 10th. Headquarters Strassburg. Strassburg. Neu-Breisach.
- Bavarian. Headquarters, Munich. Ingolstadt, Germersheim.

A few notes, taken from the military periodicals of the last ten years, may be of interest regarding the details of the above fortresses. They are mentioned in the above order.

KÖNIGSBERG.

Königsberg, situated at the mouth of the Pregel on the Frisches Haff, is a first class fortress, surrounded by an enceinte of recent construction, and by twelve (according to other authorities by thirteen) detached forts, the last of which was completed in 1882. The names of ten of these forts are Neudamm, Lauth, Quednau, Charlottenburg, Marienberg, Schönfliess, Karschau, Seligenfeld, Kalgen, and Neuendorf. On account of its proximity to the Frisches Haff, Königsberg

cannot be invested except by the co-operation of a fleet, and the entrance to the Haff is secured by the fortifications of Pillau.

PILLAU.

At Pillau, which, as above stated, defends the entrance to the Frisches Haff, there have been built two sea forts with iron (Gruson) turrets, which are defended on the land side by the old citadel to the west of the town itself, which has recently been strengthened and heavily armed. The entrance to the Haff would be closed by torpedoes, and there are other batteries in the neighbourhood of the above-mentioned forts.

MEMEL.

Memel, situated at the entrance of the Curisches Haff, is not itself fortified, but has an old citadel to the south-west, and two new batteries have been constructed near it to defend the entrance of the Haff. It is, doubtful, however, whether these could stand an attack by land and sea, but their defence against a naval attack would gain time for the defenders of Königsberg, and even if the entrance were forced the Curisches Haff is so shallow, that only ships of very light draught could navigate it.

Fort *Boyen* is a small fort (antiquated) near Lötzen on the Königsberg-Bialystok railway line.

DANZIG.

Danzig, a large commercial port and first class fortress, is situated on the Baltic near the mouth of the Vistula. It has eight detached forts, and the surrounding country can be inundated, and thus an investment would be rendered difficult. To the north of the town, on the right bank of the Vistula, is the old fortress of Weichselmünde, which has lately been strengthened. The new port of Neufahrwasser is defended by a coast battery to the west, two batteries to the east, and by a small work to the north of Weichselmünde.

COLBERG.

An old fortress of little importance, with several new coast batteries.

SWINEMÜNDE.

The town is built on the left bank of the Swine, where it enters the Baltic, and has an old fort of little value. The new earthworks are the West Battery, a strongly armed earthwork of great relief on the left bank, and the East Battery, of similar construction, on the right bank.

STRALSUND.

The town, which is surrounded by an old but partially reconstructed enceinte, is built on a tongue of land between the mainland and the Island of Rügen. To it have recently been added the Pomeranian Battery to the north of the town on the continent, the Dänholm Battery on an island to the east of the town, and the Drigge coast battery near the village of that name on the Island of Rügen.

POSEN.

Posen, situated at the confluence of the Wartha and the Potinka in a marshy country, is the point of junction of five railways, and a first class fortress, one of the strongest in Germany. The town has an enceinte with a citadel on the north (Fort Winiary) whose salients are little more than a mile from the centre of the town. At a distance of about 2 to 2½ miles from the town and forming a circuit of about 20 miles is a girdle of 9 detached forts and 3 intermediate works, all completed between 1876 and 1882. Of these, 4 forts are on the right bank of the Wartha, No. 1 at Starolenka, No. 2 at Zegrze, No. 3 at Lonez-Mühle, and No. 4 at Głowno. On the left bank, between the Lower Wartha and the Potinka and in advance of Fort Winiary, are No. 4A (intermediate work) at Wolfs-Mühle, No. 5 at Naramovice, No. 6 at Neu-Winiary, and No. 6A (intermediate work) at Golencin. Lastly, between the left bank of the Wartha above the town and the Potinka, are Forts No. 7 at Jerzyce, No. 8 at Junikovo, No. 9 at Gurczyn, and No. 9A (intermediate work) at Dembsen. ("Unter-Offizier Zeitung" of 7th September, 1883).

GLOGAU.

This town, classed as a first class fortress, on the Oder, has only fortifications dating from the reign of Frederick the Great, but these have been recently improved and even extended and still form a powerful bridge head.

Neisse and *Glatz* are old fortresses not of much importance. The former has a first, the latter a second class armament. The works of *Schweidnitz*, famed in Frederick's wars, have been demolished.

SPANDAU.

Spandau, although classed as a first class fortress and possessing an enceinte which has recently been strengthened, is of more importance as a centre of supply and a place of refuge for the archives, treasure, and Court, in the event of Berlin being threatened from within or without. In it is kept the Imperial War Treasure or reserve in coin or bullion to meet the first expenses of mobilisation.

MAGDEBURG.

Magdeburg, a first class fortress, is surrounded by an enceinte, and has a citadel on an island in the Elbe, but large suburbs have arisen outside the fortifications, which would now be of little use. In 1884, it was reported that a project had been drawn up for building a girdle of detached forts round the city, but these have not yet been commenced.

TORGAU.

This second class fortress on the Elbe has only old works of little importance.

CÜSTRIN.

This important first class fortress stands in a marshy valley at the confluence of the Oder and Wartha, and is the point of junction of six lines of rail. It is surrounded by a girdle of six powerful detached forts, two in each of the three sectors into which the circle of defence is divided by the rivers, but these are not yet completed. They are at an average distance of four miles from the old enceinte of the town. The marshy nature of the surrounding country would render an investment of Cüstrin peculiarly difficult.

MAINZ.

Mainz, or Mayence, is a first class fortress on the right bank of the Rhine surrounded by an enceinte, with the fortified suburb of Kastel on the left bank. In the south of the town is the citadel, a bastioned square. Recently, a beginning has been made with a girdle of detached forts, some four or five miles from the town. One of these, the Petersberg fort on the right bank of the Rhine to the north of Mainz, was completed in 1884, and others are under construction. The old girdle of forts comprises forts Hauptstein, Josef, Philip, Elisabeth, Carl, Hechtsheim, Hardenberg, Weissenan, Erbenheim, Kastel, and Mainspitze, 11 in all.

ULM.

This old and famous first class fortress lies on both banks of the Danube, the town itself being garrisoned by Württemberg troops, the suburb of Neu-Ulm on the other (right) bank by Bavarians. It has an enceinte, a citadel named Wilhelmsfeste, and several detached works, but the latter are too close to the town to be of much value.

RASTATT.

Rastatt is a first class fortress strongly situated on the plain on the right bank of the Rhine, but its fortifications are old. It has advanced works, 11 small lunettes, and a citadel.

METZ.

Metz, a first class fortress, already possessed a girdle of detached forts when captured by the Germans in 1870. The town enceinte with its advanced works have, since then, been repaired and strengthened, although not extended. The forts have been greatly strengthened and provided in many instances with iron cupolas in the more important positions. Permanent batteries and other works have been constructed in the intermediate spaces, and new names have been given to the forts.

The detached forts are:—On the left bank of the Moselle, Forts Alvensleben (former Plappeville), Mannstein (at the western extremity of the plateau of St. Quentin), Kameke (near Woippy), Friedrich-Carl (former St. Quentin), Hindersin (near St. Eloy), and Voigts-Rhetz (former Moselle). On the right bank, Forts Prince August of Württemberg (former St. Privat), Göben (former Queleu), Zastrow (former Des Bordes), Manteuffel (former St. Julien), and Steinmetz (former Bellecroix). All these are occupied by permanent garrisons.

DIEDENHOFEN.

Diedenhofen (Thionville), on the Moselle below Metz, has old fortifications on both banks of the river, and serves as a double bridge head. Additions have been made to it since 1870.

BITSCH.

A second class fortress built on a rocky hill, which commands the railway line from Saargemünd to Hagenau.

COLOGNE.

Cologne, or Köln, on the left bank of the Rhine, with its suburb of Deutz on the right bank, is a first class fortress. It was formerly surrounded by eleven detached forts and had an enceinte, but the new enceinte has been pushed out to the line of the old detached forts, and a new girdle of detached forts has been constructed. There are eight of these latter situated as follows:—No. 1, east of Rodenkirchen, No. 2, near the Bonn road, No. 3, near Deckstein, No. 4, near Müngersdorf, No. 5, near Bocklemünd, No. 6, near Nüssenberg, No. 7, near Longerich, and No. 8, near Niehl. In addition to these, fourteen intermediate works have been constructed to support the forts and fill the gaps between them.

COBLENZ.

Coblenz, on the left bank of the Rhine, is a first class fortress surrounded by an enceinte. Opposite it, on the right bank, is Fort Ehrenbreitstein, built on a high, rocky hill, and of great

extent. On the heights to the south-west of the town, between the Rhine and Moselle, are Forts Constantine, Franz, and Alexander, and several smaller works and blockhouses exist on the Karthauser Berg above the town, and in the space between the left bank of the Moselle and the Rhine. There are batteries at Arzheim, Kleinhell, and Niederberg.

WESEL.

Wesel, on the right bank of the Rhine, was, in 1876, raised to a first class fortress. Its enceinte dates from the time of Frederick the Great, but for the defence of the railway bridge across the Rhine, two new forts have been constructed, according to contract, by the Cologne and Minden Railway Company. One of these is to the north of the town on the right bank, the other on the left bank, near Fort Blücher, an old fort opposite Wesel. The railway bridge is approached by sloping viaducts, through the arches of which the guns of the town and of Fort Blücher can fire. Guard-houses are constructed at each end of the bridge.

RHINE BRIDGES.

All the fixed railway bridges across the Rhine are defended by works of more or less importance, mostly constructed at the expense of the railway companies. Thus the bridge near Düsseldorf is defended by a bridge-head composed of three iron cupolas on the left bank, and others not covered by fortresses are similarly provided for. The only permanent bridge not protected by fortifications is that at Mannheim.

SAARLOUIS.

The fortifications (single enceinte) of Saarlouis (second class fortress) are old and of little strength.

SONDERBURG-DÜPPEL.

The works of Düppel, so famous in the war of 1864, are in process of demolition, and only Fort Herwarth at Sonderburg, on the island of Alsen, has been retained. It is stated, however, that this latter fort is only maintained for drill purposes.

KIEL (FRIEDRICHSORT).

Kiel is the principal naval port of the Baltic, and the headquarters of the Baltic fleet. It possesses numerous strong harbour defences and iron turrets all armed with heavy guns, some of them of 28-centimètre calibre. The principal works are about Friedrichsort, and the artillery defence of the bay would be largely supplemented by torpedoes. Projects have recently been made for surrounding Kiel on the land side with

a girdle of fourteen, or, according to other authorities, sixteen detached forts at a distance of about four miles from the town, but, as yet, these are only projected.

Coast defence works of iron also exist for the defence of the port of *Wismar*.

CUXHAVEN AND ELBE DEFENCES.

The most important of the works for the defence of the Elbe and Hamburg, are the fort at Cuxhaven armed with four heavy guns, that at Grimmerhören, a closed work with two faces armed with eight guns, a little below Cuxhaven, and that at Kugelbaak, an earthwork with fourteen heavy guns, still lower down. Smaller batteries exist at Grauerort and other places, and the defences would be largely supplemented by torpedoes.

GEESTEMÜNDE AND WESER DEFENCES.

The works at the mouth of the Weser consists of four forts, or groups of defences, forming nearly a square. On the left bank are Forts Langlütjensand No. 1 and No. 2, and on the right (east) bank, Forts Brinkamahof No. 1 and No. 2.* All these are built on sandbanks, and at high tide the water comes up to their stone glacis. At low water, the sandbank between Fort Langlütjensand No. 1 and the mainland is uncovered, but the others are generally completely surrounded by water. Fort Langlütjensand No. 1 is an armoured battery of nine 21-centimetre guns, about 55 yards long. Divided among the other three forts are ten Grison cupolas containing in all 24 guns of 28- and 15-centimetres, Fort Langlütjensand No. 2 having the most (according to some authorities seven) cupolas, and the next strongest being Fort Brinkamahof No. 2. These cupolas are all of iron, and are provided with muzzle pivoting arrangements. They can be revolved either by machinery or by hand, three men being able to make each describe a complete rotation in five to ten minutes. The three heaviest weigh 600 tons each, and contain each two 28-centimetre guns. They can be turned through a complete rotation by their hydraulic machinery in 50 to 70 seconds, all three turning together, and the guns can be elevated or depressed through an angle of $17\frac{1}{2}^{\circ}$. They have stone glacis in front, but in firing the heavy guns it has been found that the masonry was displaced, and in consequence the glacis have been covered with $\frac{3}{4}$ " iron plates. Each of the three groups of cupolas is provided with a defensible barrack in rear.

* The Nos. 2 being downstream from the Nos. 1.

WILHELMSHAVEN.

The naval port of Wilhelmshaven, on Jade Bay, is the headquarters of the North Sea Fleet, and is strongly defended by coast batteries, which would be supplemented by torpedoes. On the land side, it is defended by five detached forts at Heppen, Eckwarden, Mariensiel, Schaar, and Rüstiersiel, the last of which has both sea and land fronts and a wet ditch, and by a battery at Schilling.

THORN.

Thorn, on the right bank of the Vistula, and close to the Russian frontier, is a first class fortress, and the point of junction of five lines of rail. The old enceinte of the town has recently been much extended, especially towards the north-east, and a girdle of seven powerful detached forts, with several intermediate batteries, has been constructed round the town on both banks of the Vistula.

GRAUDENZ.

The fortifications of Graudenz have lately been partially demolished, and only a sufficient number of works have been retained to form a bridge-head on the left bank of the Vistula, to cover the railway bridge.

DIRSCHAU AND MARIENBURG.

The works at these places form a double bridge-head on the Vistula, and cover the railway bridge on the Königsberg-Berlin line.

STRASSBURG.

The fortress of Strassburg, recaptured in 1870 from the French, has since that year been transformed to such an extent that few of the former works now exist. The old enceinte has been levelled, and a new one, far in advance, with a powerful citadel, constructed, and round the town, on both banks of the Rhine, and including the town of Kehl on the right bank, a girdle of powerful detached forts has been formed. On the left bank there are eleven forts, viz.:—On the north, from the river to the Vendenheim railway, Forts Fransecky, Moltke, and Roon; on the Hausbergen, to the south-west of the latter railway at Mundolsheim, Forts Podbielski, Crown Prince, and Grand Duke of Baden; thence to the river south of the town, in succession, Forts Bismarck, Crown Prince of Saxony, von der Tann, Werder, and Schwarzhoff, the latter near Altenheimerhoff. On the right bank, round Kehl, are Forts Blumen-thal, near Auenheim, Bose, near Neumühl, and Kirchbach, near

Sundheim. Numerous batteries and earthworks close the intervals between these forts. The war garrison of Strassburg is said to be 35,000 infantry, 1,300 horses, 40 field guns, 7,000 artillerymen, and 1,000 engineers.

NEU BREISACH.

This second class fortress has only an old enceinte of little value, with a citadel named Fort Mortier.

INGOLSTADT.

Ingolstadt, a first class fortress, situated on the left bank of the Danube at the point where the Schutter enters it, is the chief arsenal and centre of supply of the Kingdom of Bavaria, and the principal place of arms in South Germany. To its old fortifications have recently been added a girdle of detached forts. Three of these are on the right bank at Zuchering, Oberstimm, and Manching, and on the left bank are five, one opposite the St. Catherine Hill, one near Heppberg, a third near Geimersheim, a fourth between the two latter on the Ochsensturm Hill, and the fifth between Dönglau and Gerolfing. The spaces between them are closed by batteries and by several iron cupolas for two heavy guns each.

The other two fortresses in Bavaria (in the Palatinate), Gernersheim and Landau, have only old works. The latter is now being dismantled, and is no longer classed as a fortress.

Lastly, there is in Saxony, on the left bank of the Elbe above Pirna, the small fort of Königstein on a high rock, which closes the Elbe valley and the railway along it.

The general type of a modern German detached fort is a powerful work of shallow and simple trace, with an armament of from 15 to 25 guns, and with a low attached battery on either flank, mounting some six guns, each with its ditches running into that of the gorge of the fort. The principal details of the forts are as follows:—Relief, 26 feet; parapet, 23 to 26 feet thick; rampart, 43 to 46 feet broad, divided into two levels; crest of parapet, 7 feet 10 inches above upper level; depth of ditch, 20 feet, width at bottom, 40 feet; detached escarp wall; unrevetted escarp; no covered way; height of glacis, 6½ to 10 feet; ditch defended by caponiers at salients and shoulders, with guns in that at salient; one traverse to two guns.

An important factor in the defence of the German fortresses is the underground telegraph cable, which now connects all the fortresses in the country with one another. These lines are as follows:—

1. Berlin—Halle.
2. Leipzig—Halle—Cassel—Frankfurt—Mainz.
3. Berlin—Hamburg—Kiel.

4. Berlin—Magdeburg.
5. Frankfurt-on-the-Main—Strassburg.
6. Magdeburg—Hanover—Cologne.
7. Hamburg—Harburg—Cuxhaven.
8. Cologne—Coblenz—Treves—Metz.
9. Hamburg—Bremen—Oldenburg—Emden; with branches from Bremen to Bremerhaven, and from Sande to Wilhelmshaven, and a connection from Emden to the transatlantic cable at Greetsiel.
10. Metz—Strassburg.
11. Coblenz—Mainz.
12. Berlin—Dresden.
13. Berlin—Breslau.
14. Thorn—Danzig—Königsberg.
15. Stettin—Danzig.
16. Thorn—Münchenberg.
17. Berlin—Stettin.
18. Cologne—Aix la Chapelle.

CHAPTER X.

INSTRUCTION AND TRAINING OF THE TROOPS.

In this chapter it is proposed to give a short summary of methods adopted in Germany for the instruction of the troops, and to indicate the distribution of time in the yearly course of training. It need hardly be pointed out that, in an army like that of Germany, where all the recruits join at a fixed period of the year, it is possible to establish and carry out a programme of instruction such as is very difficult of attainment in the British army, where the recruits join all the year round. In addition, the absolute fixity of the effective of each unit, and the fact of their only in very rare instances changing stations are of vast service in preventing delays or hitches in the instruction, which goes smoothly on year after year in a fixed course of progression, and which has now gone thoroughly into the flesh and blood of the German army.

The one great principle underlying the whole is the absolute responsibility of officers commanding companies, squadrons, and batteries for the instruction of their men, and in carrying out this principle the utmost latitude is left to those officers as to the choice of the means employed, the end only being held to be of consequence. Field officers only interfere when they see that certain systems are being carried out which, if persisted in, would work harm, but even then they are chary of interfering, preferring generally to give every system a chance. The basis of the whole system is careful individual instruction and a gradual progression from the simple to the more difficult, and the keynote to the whole is the close personal supervision of all branches by the officers.

Not only regimental but staff officers exercise this supervision. They may frequently be seen looking on at drills, never interfering, but thus gaining an intimate acquaintance with the methods employed and the capacities of the officers in their division or corps, besides picking up many valuable hints themselves.

INFANTRY.

The annual course of instruction may be said to begin at the close of the grand manœuvres in the middle of September, for directly after these each company commander begins to train the *personnel* destined to take charge of his recruits. These latter join in the first week of November, each battalion on the lower strength receiving 200, and those on the increased establishment, 230 recruits* ; rifle battalions receive 190 only. Thence onward the year is divided into periods, which vary somewhat in different cases, but are on an average as follows :—

November to 1st March.—Recruits' drill and period of individual instruction.

1st March to 30th April.—Period of company drills.

1st May to 31st May.—Period of battalion drills.

1st June to 31st July.—Period of field service.

1st August to beginning of September.—Regimental and brigade drills.

September.—Grand manœuvres and departure of the reservists.

Each of these periods must now be considered in detail.

Period of Recruit Drills and Individual Instruction.

Including volunteers, each company has about 50 recruits, and these are placed under the entire charge of a specially selected officer, who has four or five under-officers as instructors and the same number of lance-corporals as assistant-instructors under him. The recruits are divided into as many squads as there are under-officers, and thus each of the latter has 10 to 13 men to instruct. At first the men are worked lightly, but soon the hours of work are increased to three hours in the morning (8 to 11 A.M.), two in the afternoon (2 to 4 P.M.), and an hour's theory and indoor instruction in the evening. The first object of the instructor is to make the men supple and handy, and with this view the "*Freiübungen*," or free exercises are begun with first. These are much the same as our extension motions, but are carried much further and include running, jumping, raising one foot, balancing on one foot, &c., &c. Each man is individually instructed, and, when they have attained to some proficiency in these, squad drill is begun. Development of the muscles is still carried on, however, for in the second

* Up to 1887 these figures were respectively 190 and 225 per battalion, the latter number being only received by regiments of the 15th Army Corps and the old regiments of the Guard.

week "*Gewehriibungen*" or club exercises, using the rifle as a club, are begun, and are succeeded in the third week by the "*Rüstübungen*" or gymnastics with appliances, such as the vaulting horse, parallel and horizontal bars, poles, ladders, ropes, &c., which are carried on all through this period and are supplemented by applied gymnastics (*Angewandtes-Turnen*) which include the passage of walls, ditches, slopes, &c. These exercises are frequently repeated all through the soldier's service, and great importance is attached to them. The instructors (officers included) have invariably to perform the exercise first. The rifle is put into the recruit's hands in the fourth week, and the manual exercise is begun with. The firing exercise is begun by teaching the recruit to aim across a sandbag, and by about the seventh week the recruits begin to shoot with aiming ammunition (*Zielmunition*). This is made up by putting a thin paper case with powder inside an ordinary case, with a papier-mâché wad on the top of it, and a bullet weighing about seven to the ounce. This cartridge is fired out of the ordinary rifle, and the bullet only flies a few paces, so that it can be used in the rooms. Marching drill is carried on from about the third week, and is followed by skirmishing drill, the latter by bugle-sound in the last fortnight. Guard duty is also practised in the barrack square in the last weeks, and about the 1st of March the inspection of the recruits takes place. They are "presented" to the commander of the regiment by the captain of their company, but the officer who has trained them is invariably in command. Quite a small fête is made of the occasion, most of the officers of the regiment being present. Each man is examined separately, and performs one or two exercises, then the whole march past and perform squad drill in three ranks, skirmishing, &c. A few words of praise or encouragement are then said to them, and next day they are placed in the ranks of the company.

During this period the older soldiers perform all the guard and fatigue duties, and perfect their instruction under the other officers and under-officers of the company. Some company commanders keep them at steady drill, while others take them out every day into the country and practise minor tactics, half-an-hour's steady drill being thrown in. The latter system seems to give the best results. Gymnastics in all branches are also practised.

Period of Company Drills.

(March and April.)

The first operation of this period is to size and tell-off the company into sections and squads, the recruits being as far as possible equally distributed. A further distribution of the men into three classes, according to their degree of instruction and intelligence is made, each class being drilled separately at times

when no company drill is being carried out, for during this period the individual instruction is carried on as before. At the beginning of the company drill period, a few route marches are made, the length of the march and the weight carried by the men being augmented progressively. On these marches, hints as to the conduct of a soldier on the march, precautions as to blisters, &c., are given, and after each march the boots are carefully examined.

After these marches, the company drills proper begin, at first on a flat drill ground. Great importance is attached to this period, which is considered to be the veritable school for the battle field. Every care is taken to make the company thoroughly handy and to attain to those ideals which are noticed in the chapter on Tactics. Frequently the companies drill without officers or under-officers, frequently they are broken up and rallied in an entirely new direction; deployments at the double to one or both flanks, formations to a flank on a simple sign, changes of direction, &c., are assiduously practised, and everything done to make the company perfectly in the hand of its commander. Skirmishing and the attack are practised first on the flat and then on broken ground. Everything is most gradually and thoroughly taught, explanations of the object of each manœuvre being always previously given in the earlier days of this period. The results attained are remarkable, and justify the remark that the German infantry is the quickest at its manœuvres of all European infantries.

Musketry instruction is also carried on in this period and will be noticed further on.

Period of Battalion Drills.

(May.)

In this period, the battalions are drilled about three times a week in the forenoon. On the remaining days company drill and musketry are carried on, the afternoons being devoted to gymnastics, bayonet fighting, aiming drill, and swimming. At first, the battalion is simply drilled in parade movements on the drill ground, but afterwards it is taken into broken ground and practised in all possible formations.

It may here be remarked that the course of instruction of the Prussian Guard differs somewhat from that of the line now being described. The periods of recruit and company drill are shorter, and the battalion drills take place early in April, the regimental and brigade drills being also over by the end of May, when the period of field service begins. Each regiment is inspected by the Emperor in May. In August again each regiment has five days' regimental drill, followed by five days' brigade drill, and on the 1st September (the day of Sedan) or thereabouts, the whole of the Guard Corps is inspected by the Emperor in Berlin, the troops thereafter proceeding to the manœuvre ground chosen.

*Period of Field Service.**(June and July.)*

There is no strictly defined date for the commencement of this period, and usually field service begins to be practised before the battalions are inspected. By "field service" the Germans mean the practice of all the details of minor tactics on active service. Thus in this period are taught the utilisation of ground by individuals and by bodies of troops, marches with all military precautions, small manoeuvres, attack and defence of localities, formation and arrangement of bivouacs, outposts, scouting, reconnoitring, field fortification, &c. During this period company and battalion drill, gymnastics, and swimming (which all men are taught) are carried on. Progress in the field service training is, like that in all other branches of instruction, very gradual, and full verbal explanations of everything are always first given. As much variety as possible is striven after, and with this view several branches are always practised on the same day. At first the companies go out singly or operate against one another, but in July battalions or even larger units are placed under one command. The explanations given by the officers are remarkably clear and lucid, and it is evident by the men's ready answers when questioned that they have thoroughly understood. As a general rule, the German officer seems to have grasped the principle of being "familiar without being vulgar," and many a long-winded explanation is made interesting by a little joke thrown in.

During this period each regiment sends 1 officer and 6 under-officers to the pioneer battalion of its army corps for a 32 days' course of instruction in field engineering, of which 2 are devoted to the making of fascines and gabions, 10 to putting localities in a state of defence, 5 to arrangement of bivouacs, 6 to bridging, 2 to destruction of railways and telegraphs, and the remainder to theory and revision of the course. The *personnel* thus trained serve as instructors for the "pioneer section," which is formed in every regiment after the autumn manoeuvres, and composed of 8 men per company. The same course as the above is in turn imparted to those men. These men are changed every year, so that a regiment has always a large number of men able to direct working parties.

*Regimental and Brigade Drills.**(August.)*

In August, the battalions of a regiment are usually concentrated (if not already in the same garrison) for seven days' regimental drill,* of which two in broken ground, after which the brigades are put through five days' brigade drill. In these

* Five days only if all the battalions occupy one garrison.

drills, only such simple exercises are performed as are laid down in the drill book. In the number of days are not included the necessary days of rest which fall within the period, and which are usually given after every two or three days' drill. Artillery is attached to the brigades in the last days of their drills, if ordered by army corps commanders. Rifle battalions also take part in these drills, after which the troops proceed to the autumn manœuvres.

Inspections.

The great principle underlying the conduct of inspections in the German army is to interfere with the course of instruction of the troops as little as possible, consistent with superior officers being perfectly conversant with the state of training of the troops under their orders. In the introductory remarks to this chapter, it has been noticed how constantly superior officers are present when the troops under their command are drilling, and thus the necessity of inspections is lessened. No body of troops is ever inspected twice in the same subject; no two superior officers, subordinate one to the other, make the same inspection; as far as possible neither day nor hour is fixed by the inspecting officer, but the unit is inspected at a time when it is performing the drill to be inspected in the usual course of its programme of instruction; and in extraordinary cases of parades, only the troops absolutely required are paraded. There is never a preliminary inspection of the troops by an officer subordinate to the inspector (the inspections by company officers of course excluded), and so no more time is taken up than is absolutely necessary. Nothing is more remarkable in German reviews than the shortness of the period between the arrival of the troops on the ground, and that of the inspector, and all this is done on the principle of losing no time. Great interest is taken in all inspections, numerous officers, both staff and regimental, off and on duty, being always present as spectators or otherwise, and the criticism in the mess-room afterwards is often as searching as that of the inspector. If a superior arrives on the ground, the inspector stops his inspection, reports to his superior, and then continues to inspect, asking permission again to close the parade.

The annual inspections in the infantry of the line are as follows:—

Date.	Inspecting Officer.	Subject of Inspection.
1. January ..	Regimental Commander	Gymnastics and bayonet fighting of old soldiers.
2. January ..	Ditto	Theoretical instruction of old soldiers.
3. February ..	Ditto	Stretcher bearers.
4. Beginning of March	Ditto	Recruits drill and gymnastics by companies.
5. March ..	Ditto	Under officers in regimental school.
6. May ..	Ditto	Company drill.
7. May ..	Ditto	Gymnastics and theoretical instruction by companies.

Date.	Inspecting Officer.	Subject of Inspection.
8. Beginning of June	Regimental Commander	Battalion drill.
9. July or August	Ditto	Musketry.
10. July ..	Ditto	Field service by companies.
11. August ..	Ditto	Gymnastics (higher).
12. August ..	Corps Commander	Regimental drill.
13. October ..	Regimental Commander	Regimental pioneers.

In addition, inspections of all the clothing, stores, arms, and material of each regiment are made every three or four years by the brigadier-general.

Musketry.

Musketry instruction goes on, as a rule, all the year round, except at the time of the autumn manœuvres. Immediately after these, all the men who have not finished the annual course of musketry do so. In winter, target practice is carried on twice a week, but from March musketry instruction is pushed forward as energetically as possible, so that most of the men have finished their course when the field exercises begin. During the latter period, field and instructional firing are carried on, and these should be finished by the time of the musketry inspection. For recruits, musketry begins as above stated, at about the end of their second month of service.

Five kinds of targets are in use, viz. :—

1. The "Band Target" (*Strichscheibe*) is 47.2" broad and 66.9" high, is painted white, and is divided into three equal vertical parts by two black lines. The centre part is termed the "man's breadth." Down the centre of the "man's breadth" is painted a black vertical line 2.34" broad, termed the "band," and 1.17" to the right and left of this are two red lines. Hits in this space of 4.68" are termed "band hits." From the centre of the band, with diameters of 1.95, 2.9, and 4.85", are traced three circles. The inner one is left white and is numbered 12, the two outer circles are filled in in black and numbered 11 and 10. The whole of the circles form the bullseye. 9.75" above and below the centre of the target, a black patch 7.8" long and 3.9" high, crosses the band at right angles.

2. The "Ring Target" (*Ringscheibe*) is the same size as the "Band Target," and like it is divided into three vertical parts, the centre one of which is termed the "man's breadth." The "man's breadth" is white; the outer parts are coloured the same as the background. The "band" is described in the same manner as in the "band target," but from its centre, with radii of 1.95" for the centre ring, and increasing by 1.95" for each of the others, are described 12 rings, numbered from 12 to 1. The inner one (No. 12) is left white; the rings Nos. 11 and 10 are painted black, and the remainder are merely denoted by the narrow black lines of the circles. Rings Nos. 12, 11, and 10 form the bullseye, and a hit in any ring counts the same number of points as the ring is marked.

3. The "Figure Target" (*Figurscheibe*) is 66½" high and 19½" broad, and has a figure of a soldier painted on it. This target is also used, cut into pieces to represent a man lying down, raised on his elbows, sitting, and kneeling, and termed head, breast, trunk, and kneeling targets. They are respectively cut off at 13½, 19½, 33½, and 46½" from the top of the standing target.

4. The "Section Target" (*Sektionsscheibe*), 66½" high, and 78" broad, divided into five equal vertical bands, two painted grey and three white.

5. Moveable and disappearing targets.

Each battalion receives 18½ a year to keep up its targets, which are constructed of canvas on wooden frames.

There are three kinds of practice. Target practice proper (*Schulschiessen*), field firing, and instructional firing (*Belhrungs-Schiessen*). The first two are taken part in by all the officers and men, the last is only executed by selected marksmen to demonstrate the properties of the rifle.

The men are divided into three shooting classes. To the 3rd class belong all recruits in their first year of service. In their second year they *may* pass to the 2nd class if they are passed by their company commander, and at the end of their second year may be transferred to the 1st class if similarly passed. Under-officers form a special class. A man once placed in a shooting class cannot be reverted to a lower class, and if he finds difficulty in fulfilling his conditions, more cartridges are allowed him. Formerly, a man had to fulfil the conditions of each exercise before proceeding to the next on the list, but he now goes on through the series, and at the end of the year repeats the exercises in which he failed. Everything is done to encourage the men in shooting, and to make them take an interest in it.

The target practice proper is divided for each class into preliminary exercises (*Vorübungen*) and principal exercises (*Hauptübungen*). The following tables show the exercises for each class:—

THIRD SHOOTING CLASS.

No. of Practice.	Range in Yards.	Position.	Target.	Conditions to be fulfilled.	Remarks.
<i>Preparatory Practices (Conditions to be fulfilled in 3 Shots).</i>					
1	110	Standing, with rest ..	Band target ..	3 hits in the man's breadth, 1 in the band.	
2	110	Ditto ..	Ditto ..	3 hits in the man's breadth, 2 in the band, 1 of them in bull's-eye.	
3	110	Ditto ..	Ring target ..	3 hits in the man's breadth, 2 in the bull's-eye, 27 points in the rings.	
4	110	Standing, hands free ..	Ditto ..	3 hits in the man's breadth, 21 points.	
5	165	Standing, with rest ..	Ditto ..	3 hits in the man's breadth, 1 bull's-eye, 20 points.	
6	165	Standing, hands free ..	Ditto ..	3 hits, 2 in the man's breadth, 15 points.	
<i>Principal Practices (Conditions to be fulfilled in 5 Shots, in the last Practice in 6).</i>					
7	165	Lying down, hands free ..	Body figure ..	3 hits.	
8	165	Lying down, with rest ..	Breast figure ..	3 hits.	
9	220	Kneeling .. rest, ..	Kneeling figure ..	2 hits.	
10	220	Standing, with rest, behind a parapet ..	Disappearing body figure ..	2 hits.	
11	275	Lying down, hands free ..	Full figure ..	2 hits.	
12	440	Lying down, with rest ..	Section target ..	4 hits.	
13	165	Standing, hands free ..	Ring target ..	5 hits, 3 in the man's breadth, 1 bull's-eye, 30 points.	
14	165	Ditto ..	4 figure targets, 15-6 inches apart ..	No conditions. One hit in 3 figures is sufficiently good.	1 cartridge in the barrel, 5 in the closed magazine. One minute allowed from the first shot. Magazine fire.

SECOND SHOOTING CLASS.

No. of Practice.	Range in Yards.	Position.	Target.	Conditions to be fulfilled.	Remarks.
<i>Preparatory Practices (Conditions to be fulfilled in 3 Shots).</i>					
1	110	Standing, with rest ..	Band target ..	3 hits in the man's breadth, 2 in the band in the bull's-eye.	
2	165	Ditto ..	Ring target ..	3 hits in the man's breadth, 1 in the bull's-eye, 25 points.	
3	165	Standing, hands free ..	Ditto ..	3 hits in the man's breadth, 15 points.	
<i>Principal Practices (Conditions to be fulfilled in 5 Shots, in the last Practice in 7).</i>					
4	110	Lying down, with rest..	Head figure ..	3 hits.	
5	165	Lying down, hands free	Breast figure ..	2 hits.	
6	220	Standing, with rest, behind a parapet	Disappearing breast figure	2 hits.	
7	330	Lying down, hands free	2 figure targets, close together	3 hits.	
8	550	Kneeling ..	Section target ..	3 hits.	
9	220	Standing, hands free ..	Ring target ..	5 hits, 8 in the man's breadth, 25 points.	
10	165	Kneeling ..	4 kneeling figures, 15 6 inches apart	No conditions. One hit in 3 figures is sufficiently good.	1 cartridge in the barrel, 6 in the closed magazine. One minute allowed from the first shot. Magazine fire.

FIRST SHOOTING CLASS.

No. of Practice.	Range in Yards.	Position.	Target.	Conditions to be fulfilled.	Remarks.
<i>Preliminary Practices (Conditions to be fulfilled in 3 Shots).</i>					
1	110	Standing, with rest ..	Band target ..	3 bull's-eyes with 2 hits in the band, or 3 hits in the band with 2 bull's-eyes.	
2	165	Ditto ..	Ring target ..	3 hits in the man's breadth, 2 bull's-eyes, 27 points.	
3	165	Standing, hands free ..	Ditto ..	3 hits in the man's breadth, 1 bull's-eye, 21 points.	
<i>Principal Practices (Conditions to be fulfilled in 5 Shots in the last Practice in 9).</i>					
4	165	Lying down, with rest..	Head figure ..	3 hits.	
5	220	Standing, with rest, behind a parapet	Disappearing breast figure ..	2 hits.	
6	330	Lying down, hands free	2 kneeling figures close together	3 hits.	
7	385	Kneeling ..	2 figure targets close together	3 hits.	
8	660	Ditto ..	Section target ..	3 hits.	
9	220	Standing, hands free ..	Ring target ..	5 hits, 4 in the man's breadth, 25 points.	
10	165	Lying down, hands free	4 body figures, 16'6 inches apart	No conditions. One hit in 3 figures is sufficiently good.	1 cartridge in the barrel, 8 in the closed magazine. One minute allowed from the first shot. Magazine fire.

Field firing is practised by recruits after they have shot through their course of target practice, but for old soldiers it may be practised at any time. It is divided into individual firing (*Einzelschiessen*), and firing by formed bodies (*Abtheilungsschiessen*), 15 rounds per man being allowed for the former and 30 for the latter, but these numbers are often supplemented. For individual firing the targets used are figure targets of the various descriptions, which are placed in broken ground at unknown ranges, some of them being movable or disappearing. Any position is allowed, and the man judges his own distance. Field firing by formed bodies is always executed by sections or companies on the war strength, and forms the final act of the training of the troops in musketry. A tactical idea usually underlies each exercise, and firing by night is also practised. Section targets are those generally used, and the men are always shewn the targets afterwards.

Instructional firing is for the purpose of shewing the men the ballistic properties of their arm, and the effect of massed fire. The exercises are executed by picked shots, the other men looking on. Four exercises are devoted to shewing the ballistic properties of the rifle as follows:—

1. Determination of the mean point of impact from various rifles. A man fires 5 shots at 100 yards from each of 3 rifles, aiming always at the same point. This is to shew the difference between rifles, and the necessity for each man learning the shooting of his own.

2. Representation of the accuracy of the rifle at 220, 275, 385, 495, and 660 yards. A man fires 5 rounds at each of those, aiming at a spot marked on a target.

3. Representation of the trajectory with the fixed sight (*Stand Visir*), the small flap (*Kleine Klappe*), and the 400-mètre sight. A man fires first with the fixed sight, then with the small flap, and then with the 400-mètre sight, at distances from 55 to 440 yards, at a point marked at the bottom of section targets. The points of impact on the various targets then give a picture of the height of the trajectory at the various ranges.

4. Representation of the influence of the fixed bayonet. A man fires at 220 yards, 5 rounds without and 5 with the bayonet fixed.

The effect of fire under special circumstances is demonstrated in three exercises:—

1. Single men fire at 220 yards from behind cover at targets placed behind cover with openings of 3·9 inches by 1·8 inches to show the effect of cover in siege warfare. The other men observe the effect of the shots.

2. Smaller or larger groups fire from shelter-trenches at 440 to 770 yards at broad targets 13·6 inches high or at disappearing targets placed on mounds to show the effect of fire in siege warfare and the manner of correcting elevation.

3. Smaller or larger groups fire by night from trenches at 220 to 770 yards, using fixed rests for their rifles to show the effect of fire by night or in foggy weather. The mode of constructing rests for rifles is explained.

The course of musketry instruction for the year closes with the inspection in musketry (*Prüfungs-schiessen*), carried out in July or August, and divided into individual firing and firing in broken ground. The inspector in the former case is the regimental commander, and 60 men (72 in companies on the increased establishment) per company take part in it, selected in equal numbers from the best shots of the men in their second year, from the best of those in their first year, and from the next best of those in their first year of service. These fire 5 rounds per man at 220 yards at a ring target, the two former batches standing with hands free, the latter standing with a rest. Six under-officers per company also fire at 220 yards. The brigade-commander is the inspector in the case of firing in broken ground and directs what exercises are to be carried out and by what units. Special reports on the individual firing inspection are appended to the musketry reports.

For musketry prizes, silver medals are given, each battalion receiving 14 of them. Two are given to the non-commissioned officers, the remaining 12 to the three best shots in each class in each company, i.e., to the man who has fulfilled his conditions with the smallest number of rounds. Shooting badges are also given, 12 to each company, and 12 to the best shots among the non-commissioned officers of the battalion. They consist of bars of lace of the national colours worn on the sleeve, and the 12 for each company are distributed, 5 to the best first-class shots, 4 to the best of the second class, and 3 to the best of the third.

In order to encourage shooting among the officers and non-commissioned officers of infantry and rifles, prizes have been instituted this year for both categories. A sword is to be given annually to the best shot among the infantry officers of each Army Corps, and a watch to the best shot among the infantry non-commissioned officers. Similar prizes are also to be shot for annually by the officers and non-commissioned officers of the non-commissioned officers' schools, and by the officers and non-commissioned officers in the Rifles.

Each company has to hand in two musketry reports by the 1st November, one showing the total amount of ammunition expended, the other a general report upon the year's practice. These reports are summarised in the battalion reports which are forwarded so as to reach the Emperor by the 30th November, along with the report on the musketry inspection.

For rifle battalions, the course of musketry is conducted on the same principles as in the infantry, but the conditions to be fulfilled are more difficult. The targets are also slightly different, the section target having 12 concentric rings and no lines marking the man's breadths on it. Each battalion of

rifles receives 37l. 10s. per annum for the repair and construction of its targets.

An exercise peculiar to rifle battalions is "Irritation" Firing (*Irritations Schiessen*) intended to accustom the men's nerves to other men firing alongside them. Ten men are placed in line with only elbow room, and then fire simultaneously 5 rounds each at ranges of 220 to 330 yards.

CAVALRY.

In the German cavalry, the instructional year cannot be divided into periods with the same precision as in the infantry. A large proportion of the recruits of the cavalry are four-year volunteers* who arrive on the 1st October along with the recruits of the ordinary contingent. As a general rule, the autumn, winter, and part of the spring up to May, are given up to individual instruction. From about the 1st of May squadron drills begin, and those are followed by regimental and brigade drills, in which all the men and horses except the young remounts take part. From the beginning of August field drills and field service are carried on up to the period of grand manoeuvres.

For purposes of description, however, the year may be divided into periods as follows:—

From 1st October to 1st May. Individual instruction and recruits' drill.

From 1st May to the middle of June. Squadron drills (the last ten days regimental drill in the Guards),

From the middle of June to the beginning of August. Field service and minor tactics.

In August. Regimental and brigade drills.

In the last week of August and the beginning of September. Cavalry divisional exercises and grand manoeuvres.

Before proceeding, however, to the details of these periods a few words may be said on the

Training of Remounts.

Remounts are bought as three-year olds (see Part I) and are kept for their fourth year in the dépôts, at the end of which they are sent to the regiments, which they generally join about the end of September. The object of their training is that at the end of a year they shall be perfectly fitted to take their places in the ranks in the event of a mobilisation. During this year they are classed as young remounts (*Junge Remonten*), but a year is considered too short a period to properly break a horse in, and consequently for their second winter, up to the month

* Some crack regiments, such as the Guard and Ziethen's (3rd) Hussars, are almost entirely composed of these men.

of May, they are classed separately as old remounts (*Alte Remonten*) and their training as remounts is perfected.

On the arrival of remounts in a regiment, they are placed by squadrons under a selected officer with selected men as riders, and for the first week or so are only led alongside quiet horses, with a man on their backs, to accustom them to the weight on their backs and to the close proximity of other horses. After this the instruction is very gradual, and every effort is made to give the horse confidence and to accustom him to a man touching him in all parts and sitting on him in all positions. The various methods employed to make the animal handy and obedient to the aids need not be entered upon here, but it may be remarked that nothing can exceed the patience with which the young horses are treated, and that the results obtained are really wonderful. Great attention is paid to leaping, the remounts being first taken over unsaddled along with an old horse and afterwards made to go over quite by themselves. The result of this careful progressive training is that it is extremely rare to see a horse refuse a jump, either in or out of the ranks, in the German cavalry.

Period of Recruit Drill and Individual Instruction.

Each squadron is supposed to receive at least 30 recruits, but in reality it receives from 35 to 45, which are divided into groups of 10 to 15 men, each under an under-officer with a lance-corporal to assist him, all the recruits of one squadron being placed under a selected officer. Most of the recruits have ridden before, but all have to go through the same course of instruction in equitation, and they are sent to riding drill at the latest at the end of their first week of service. The oldest and steadiest horses are always chosen for them. For the first two months, the men ride on blankets with snaffle bits, a well mounted old soldier leading each ride and the men riding with very long reins so as to prevent them from hanging on their horses' mouths. Particular attention is paid to a correct position, to the use of the aids, to turns and circles, to increasing the pace, and to leaping the bar. For the next month, the recruits ride in saddles, but at first little use is made of stirrups and it is only at the end of this period that bits are used, on which the men ride for a further period of two weeks. The last six weeks of the five months passed in the riding school are devoted to riding drill with arms and sword exercise mounted. The last month of the recruits' course of equitation is carried on out of doors, formation of threes and of line, galloping at the regulation pace, the charge, and leaping being the principle points attended to. At first no arms are worn, but the last drills are in marching order.

The instruction of the recruits in foot drill, gymnastics, sword exercise, and vaulting is carried on throughout this

period. Carbine drill is begun about the beginning of January and musketry towards the beginning of February, saddling and packing kits being also begun in January. The daily distribution of time is about 1 to 1½ hours a day riding, 1 to 1½ hour's foot drill, 1½ or 1 hour's gymnastics, and 1 hour's theory in the evenings. The recruits take their turn of stable duty but do no guards till the 1st May, about which time they are placed in the ranks of the squadron.

During this period, the older soldiers are divided into two classes, the best riders and those who are capable of breaking remounts (some 30 to 50 men) forming the second, the remainder (50 to 40 men) the first class. A third class is sometimes formed of the instructors (officers and under-officers). These classes are sub-divided into rides of 10 to 15 men, according to their proficiency in riding. Horses are told off to each according to their temperaments, the best riders getting the horses which require most riding, some of them even having two horses to ride and having to be twice a day in the school. Remounts are ridden every day, the remainder only five days a week. First class men ride in saddle and snaffle till the 10th January, with bits till the 10th February, with arms (practising heads and posts) till the 10th March, and marching order till the 1st May. The second class follow the same method but the horses are kitted about the 1st February. The distribution by classes is only kept up till the 1st April, when that by *Züge* as they stand in the squadron takes its place and movements in the open are practised along with the recruits.

During this period foot drills are carried on twice a week, by squads up to the 15th February, and after that date by squadrons. Twice a week gymnastics are practised, and the remainder of the time is taken up in sword practice, which is most systematically taught. The cuts, guards, and points are first taught on foot in single rank, then with two ranks cutting at one another, old swords being used. The next step is cutting and pointing at figures, first at the halt, then on the march (on foot), and the same practices are repeated on a saddle in marching order on a wooden horse, after which the men repeat the same exercises on horseback, and are trained in mounted combats and *meleés*. Gymnastics, vaulting, and sword practice are taught by officers who have passed through the Central Gymnastic School at Berlin.

Officers' rides take place five times a week, under the officer commanding the regiment, and trumpeters' the same, under the regimental Adjutant.

Theoretical instruction in all branches of field service, elementary veterinary science, military obligations and duties, &c., is given generally four times a week in the evenings, twice by officers, and twice by under-officers. Courses in shoeing horses are also held by the veterinary surgeon, and in the repair of arms by the master armourer.

The above course of instruction must be taken as only

approximate, for the distribution of time is made by officers commanding regiments, and of course varies with each individual's ideas on the subject. On considering it, it is evident what an enormous amount of work the German cavalry subaltern has to get through in a day. Each squadron has about three subalterns: two of these have three rides each to drill a day, one of them having in addition the theoretical instruction of the under-officers, the other all the foot drills, gymnastics, sword practice, and theoretical instruction of the older soldiers. The third Subaltern has his day entirely taken up with the instruction of the recruits. When to the above we add five officers' rides a week for every Subaltern, we get a sum of work which is probably attained to by no other body of officers in the world. And it is precisely to this close superintendence by the officers that the German cavalry owes its magnificent reputation.

Period of the Spring Drills.

About the 1st of May, the recruits and old remounts are placed in the ranks, and the squadron is definitely told off into *Züge*. Squadron drill begins at this date. Hitherto the object of the instruction has been the individual training of men and horses, now it is the training of the squadron as a tactical body. The squadron drills last six weeks in line regiments, i.e., till the middle of June, but in the Guard the regimental drills have also to be completed by this time. Usually each drill begins with some individual exercises, sword drill, &c., then the squadron marches past, and finally it is drilled for a considerable period at a smart trot. Great importance is attached to the horses being able to keep their wind during a long period at the trot and to charge at the end of it, and frequently German squadrons may be seen after an hour's drill at the trot, with hardly a pause in it, without a single horse sweating. This is simply attained by careful training, and a series of progressive exercises. Often a squadron is divided into two parts which manœuvre against one another, or the whole squadron is dispersed, the men cutting the sword exercise, and then being rallied and made to charge at once. Great importance is with justice attached to this squadron training, and on no account are regimental parades allowed during this period.

As mentioned above, the last seven days of this period are devoted in the Guard to regimental drills, at the end of which each regiment is inspected by the Emperor. The brigade drills then take place for six days, after which the Guards proceed with the field service exercises.

Period of Field Service.

This commences for the line in the middle of June, and for the Guard about a week later, and lasts for six weeks or two

months. During it are taught scouting, reconnoitring, outposts, raids, destruction of communications, in fact, all the branches of the duty of a cavalry soldier in war, off the battlefield. Everything is taught in the very greatest detail, and most particular care is taken with the instruction of individuals. The squadrons leave barracks about 6 A.M. and seldom return before 12 or 1 P.M. Squadron works against squadron, or smaller or larger bodies are employed. An enemy is invariably marked at least.

Period of Autumn Drills.

From about the beginning of August, all cavalry regiments are concentrated for regimental drill, this concentration generally taking place at regimental headquarters. These drills last for 3 days in the Guard, and for 10 days in other regiments, except such as take part in cavalry divisional drills, which have only 8 days' regimental drill. All movements laid down in the drill book are then practised, great attention being paid to the pace and the uniformity of manoeuvring of all the squadrons. Following these come six days of brigade drill, each brigade being concentrated at a point suited for the drill of large bodies of troops. These regimental and brigade drills are simply *drills*, no reconnoitring or scouting (except, of course, that immediately preceding an attack) being practised. In these may be seen the same system of long periods at a trot noticed above, and great attention is paid to the attack.

Period of the Manœuvres.

Cavalry take part in the manœuvres of the other arms, but generally two divisions of cavalry are formed for cavalry divisional exercises before the period of the grand manœuvres. Thus in 1886 two divisions were constituted at Metz and Strassburg, from troops of the 8th, 11th, 13th, 14th, and 15th Corps, each of six regiments of five squadrons each, and carried out exercises extending over ten days in the last week of August and the first of September. Two horse batteries were attached to each from the fourth day of the manœuvres. The three first days were devoted to brigade drills and exercises in lines, the remainder being manœuvres of the divisions against marked enemies. Each division manœuvred separately, and on the conclusion of these special manœuvres they took part in the Imperial manœuvres of the 15th Army Corps. In 1885, the same system was carried out, two cavalry divisions being formed from regiments and batteries of the 2nd, 3th, 4th, 9th, and 10th Corps. The programme was the same, except that the special cavalry manœuvres only extended over six days, the last three of the nine during which the divisions were kept together being employed in the division against division manœuvres of the 3rd Army Corps. In 1884, all the regiments of the 5th, 6th, 9th, and 10th Corps were assembled (by corps)

for nine days' divisional exercises, those of the 5th and 6th Corps manœuvring against one another, the two other divisions working independently. The Field Service Regulations now lay down that when cavalry divisions are formed for drill, 3 days are to be devoted to brigade, and 6 to divisional drills, days of rest not included, and that 2 horse batteries are to be attached to each division for the divisional drills.

It will, therefore, be seen that each year a large portion of the German cavalry gets an opportunity of working in large masses, which cannot but be of the greatest advantage for the efficiency of the arm on the battle-field.

Inspections.

The following are the inspections usually made in the German cavalry:—

Date.	Inspecting Officer.	Subject of Inspection.
1. End of December ..	The Colonel	Recruits riding on the snaffle.
2. Beginning of January	Ditto	1st class ride, on the snaffle.
3. End of January ..	The Colonel and the Brigadier	2nd class ride, on the snaffle.
4. Ditto ..	Ditto	Remounts ride, on the snaffle.
5. End of February or middle of March	The Colonel	Foot and sword drill.
6. End of March or beginning of April	The Colonel and the Brigadier	Recruits and 1st class ride on the bit.
7. Beginning of April ..	The Brigadier	Foot parade.
8. In March or April ..	The Colonel	Officers' ride.
9. From 1st to 15th May	The Colonel and the Brigadier	Squadrons mounted.
10. From 7th to 17th June (in the Guard only)	The Emperor	Regiment mounted.
11. In August	The Brigadier	Regiment mounted.
12. Ditto	Divisional or Army Corps C.O.	Brigade.

In May, June, and July, the stores, &c., of each regiment are inspected every two years by the Brigadier, assisted by officials of the intendance.

Musketry.

The course of musketry extends over the whole year, but is principally carried out in summer, and most cavalry regiments have their own range. Each man armed with a carbine has forty rounds of ball cartridge to fire per annum, and fifteen rounds each are in addition allowed for the 120 best shots in each regiment. In addition, extra rounds are given for lead returned. Practice is carried on up to 600 mètres. Men armed with revolvers are allowed twenty rounds of ball cartridge per annum, which are fired in four exercises of five shots each, fired consecutively at 20 and 25 mètres. In each squadron two silver medals, worth 6s. and 3s., and for the non-commissioned officers of each regiment two such, worth 7s. 6d. and 4s. 6d. are given as shooting prizes annually.

Special Exercises.

Every year, in seven or eight army corps, "Cavalry Instructional Journeys" are held, for which some 2,000 marks (100*l.*) per army corps are allowed. These are headed by Staff or Cavalry field officers, and composed of officers selected from the regiments. Tactical problems are worked out on the ground, and special exercises in reconnoitring, sketching, outposts, &c., are given to individuals to solve. Great value is attached to these exercises in the cavalry.

Field bridging is much practised, the bridges being constructed of materials found on the spot.

In the cavalry, as in the infantry, a certain number of officers and men are instructed every year in pioneer duties. Each regiment sends on the 1st July two officers, two under-officers, and four men to the pioneer battalion of its army corps for a thirty days' course of instruction, but only one officer per army corps and one under-officer and two men per regiment remain for the last sixteen days of the course. The first fourteen days are spent in teaching the organisation of camps and bivouacs, the repair of roads, the interruption of communications, means of transport by water, the passage of rivers, the search for and improvement of fords, and the destruction of railways and telegraphs. In the last sixteen days, the subjects of instruction are rowing of boats, laying of anchors, repair of damaged boats, and the construction of field bridges. The officers and men thus trained serve as instructors in their regiments in peace and as cavalry pioneers in war.

FIELD ARTILLERY.

In the field and horse artillery the instruction is entirely in the hands of the captains commanding batteries, the officers commanding *Abtheilungen* and regiments only supervising generally to ensure uniformity of system. The recruits join in November, but the yearly course of instruction commences on the 1st October and is divided into four periods as follows :—

- (a.) Period of individual instruction (for recruits and old soldiers) from the 1st October to the 1st April.
- (b.) Period of battery, &c., drills, from 1st April to the end of July.
- (c.) Period of practice, from June or July (according to the programme laid down for each practice range) to the middle of August.
- (d.) Period of the manoeuvres, from the middle of August to the end of the manoeuvres.

*Period of Individual Instruction.**(a.) Recruits.*

Each field battery receives 30 or 35, and each horse battery 25 or 30 recruits at least, according as it is on the lower or higher establishment, to which must be added the one-year volunteers. The recruits are placed under a specially chosen officer in each battery, under whose orders are a number of selected under-officers who impart detailed instruction. For the first four weeks, the course comprises setting-up drill, squad drill, and gymnastics, including vaulting. At the beginning of the fifth week a commencement is made with gun drill, and for the first few drills the recruits are merely brought to look on at the older soldiers and are then taught the nomenclature of the various parts of the gun, technical terms, &c. Great care is taken that the under-officers do not run into too much detail at first. Standing gun drill is then proceeded with, and, before limbering up and unlimbering are taught, the recruits are again brought to look on at the drill of the older soldiers, and the leading principles are explained to them. Later on, the various cases of disabled ordnance and the packing of carriages are taught. From the 1st February, the recruits are mixed up in squads with the old gunners and are taught guard duties (although themselves doing no guards) and their duties in stables and in harnessing, &c. No men in their first year of service are trained as drivers in the field artillery.

In the horse artillery, the instruction of the recruits is carried on in much the same manner as in the field batteries, except that the course of gymnastics and vaulting is more extended; and that gun drill is only begun in the seventh week. Riding drill is begun in the third week and instruction in equitation is carried out in the same manner as in the cavalry (*q.v.*). The recruits of each battery form a class and ride about six times a week. By the 1st April, the men should be fit to take their places as gunners in the battery. Stable duties are taught from the first. Towards the end of this period whole detachments are formed of recruits for gun drill (mounted), and care is taken that every man performs the duties of each number in succession.

Theoretical instruction is carried on throughout this period in the evenings, as little detail as possible being entered into, so as not to burden the men's memories at first with figures.

A recruit is usually kept at drill from 8 to 11 A.M. and from 1 to 4 P.M.

(β.) Old Soldiers.

The period of individual instruction for old soldiers begins on the 1st October, and each battery has in this period to instruct 14 drivers, chosen from the men in their second year of service, whose instruction in riding has to be finished by the end of March. Driving drill is begun by those on the 1st

April, and is finished by the end of the month. In the horse artillery, driving drill is begun at once on the 1st October, as the men of this branch learn riding in their first year. For drivers, the morning is spent in mounted drill and stables, while in the afternoon their instruction in gun drill, gymnastics, and theory is continued. During the whole of this period the instruction of the old soldiers in gun drill, foot drill, gymnastics, vaulting, packing of carriages, riding, driving, sword-drill, and theory is perfected and the senior lieutenants give lectures on the theory of artillery to the under-officers. The gunners best fitted for the duties are chosen as layers and their instruction is most carefully carried on. As concerns riding, the men of a field battery are divided into three classes—under-officers, old drivers, and young drivers; and those of a horse battery into four—under-officers, old gunners, drivers, and recruits. Each *Abtheilung* has in addition a “model ride,” chosen from the best men of all the batteries. Each of these rides is trained separately, the senior lieutenants instructing the model ride, the others the other classes; the latter may be placed in charge of an under-officer, who, however, is always supervised by an officer. The course of training is very gradual, the horses being ridden for a long period on the snaffle. In driving drill, great importance is attached to the passage of obstacles, and this branch of instruction is most systematically carried out under the battery officers. The trumpeters are trained by the trumpet-major under the supervision of the adjutant of the regiment or *Abtheilung*. The greatest liberty is left to battery commanders as regards the distribution of time for all these drills, and the instruction is entirely in their hands with the exception of that of the remounts (see below).

(b.) *Period of Battery, &c., Drills.*

This period begins on the 1st April, by which time the recruits are supposed to be able to take their places in the ranks. At first, battery drill is carried on under the captains of batteries, but later on the *Abtheilungen** are drilled by their majors. Frequently batteries of six guns are formed from two batteries, and drill thus carried out on the war strength. Foot drills, vaulting, theoretical instruction, judging-distance drill, cases of disabled ordnance, and revolver firing are also carried out in the afternoons and evenings. In the horse artillery the gunners are drilled as a squadron of cavalry, and taught to charge to cover their guns in retreat. Great care is taken with the instruction in the passage of obstacles, the teams being first sent over in pairs, then all the pairs hooked together, then the whole team hooked into the gun. Manœuvres in broken ground are frequently carried out, blank cartridge being used, the formation of masses of artillery and the distribution of the fire

* It may be here pointed out that the only four cases in which batteries are stationed away from the headquarters of their *Abtheilung* are those of the 2nd Battery 24th Regiment, 5th Battery 10th Regiment, 1st Horse Battery 11th Regiment, and 7th Battery 4th Bavarian Regiment.

of the batteries on various objects are practised, reconnaissances are made by officers and under-officers, tactical problems are solved, and bivouacs, picketing, and field engineering are practised. In this period all the cartridges to be used at the annual practice are made up, the recruits also being employed on this duty, and finally each regiment makes an experimental mobilisation of one battery. The various units of this battery are furnished by all the batteries, one contributing a gun, the next an ammunition wagon, and so on. This battery is entrained and detrained on the railway, and a special report is made on the whole operation. Batteries not garrisoned near the practice range are also exercised in route marching.

(c.) *Period of Practice.*

Before proceeding to the description of this period of the German artillery training, it may be useful to give a few notes on the practice ranges. These are twelve in number, and the following list gives the localities in which they are established, the troops which use each, and the distribution of time fixed for the year 1885 for certain of them.

Locality.	Troops using the Range.	1885.	
		Practice began.	Ended.
Tegel (near Berlin)	Guard Field Artillery Brigade	25th June	21st July.
Hammerstein ..	1st Field Artillery Brigade		
	2nd Field Artillery Brigade		
Jüterbog (Brandenburg)	3rd Field Artillery Brigade ..	22nd June	20th July.
	4th Field Artillery Brigade ..	25th July	19th August.
	Guard Foot Artillery Regiment	September	
Gruppe	1st Foot Artillery Regiment		
	2nd Foot Artillery Regiment		
	3rd Foot Artillery Regiment		
Falkenberg ..	11th Foot Artillery Regiment		
	5th Field Artillery Brigade ..	16th July	18th August.
	6th Field Artillery Brigade ..	15th June	13th July.
Wesel ..	6th Foot Artillery Regiment ..	12th May	12th June.
	7th Field Artillery Brigade ..	25th June	23rd July.
	4th Foot Artillery Regiment ..	18th August	16th September.
	7th Foot Artillery Regiment ..	5th May	6th June.
	9th Foot Artillery Battalion		
Wahn (Rhineland)	8th Field Artillery Brigade ..	9th June	7th July.
	8th Foot Artillery Regiment	5th May	6th June.
	12th Foot Artillery Regiment	10th July	8th August.
Lockstedt (Holstein)	9th Field Artillery Brigade ..	7th July	4th August.
	10th Field Artillery Brigade	6th June	4th July.
	11th Field Artillery Brigade	11th June	13th July.
Darmstadt ..	25th Field Artillery Regiment	9th June onwards.	
	3rd Foot Artillery Regiment	7th May	8th June.
	Württemberg Artillery ..	16th July	15th August.
	14th Field Artillery Brigade	7th June	15th July.
Hagenau ..	15th Field Artillery Brigade	18th July	15th August.
	10th Foot Artillery Regiment	18th August onwards.	
	14th Foot Artillery Battalion		
	1st Bavarian 2nd Bavarian Foot Artillery Regiment	12th May	13th June.
Zeithain (near Riesa) ..	Saxon Artillery		
Lechfeld (near Augsburg) ..	Bavarian Artillery		

These are all large ranges, as much as 5,500 yards long, situated on heaths or surrounded by forests. In their immediate vicinity have been or are being constructed stone hut barracks and permanent stables sufficient to accommodate a whole brigade of field artillery at a time, with officers' mess, officers' quarters, reading and recreation rooms, canteens, stores, magazines, laboratories, &c., &c. These practice ranges with their barracks are also used in many instances by the cavalry for their regimental drills, by the infantry for their field firing, and by the Landwehr when called up for training, so that in reality they are occupied for a good portion of the year. Each range is administered by a committee, composed of a field officer nominated by the Inspector-General of Artillery, a first lieutenant nominated by the commander of the Field Artillery Brigade in whose district the range is situated, and of the officer of artificers of that brigade. This committee makes all arrangements for the supply of stores and the repair of the buildings, &c., but the batteries bring their own material and ammunition. A sum of money, which for Prussia alone amounts to about seven millions of marks (350,000*l.*), is set apart every year for the expenses of the artillery practice, and this is divided among the various ranges. Fatigue parties are sent ahead by each regiment, &c., to make all preparations for its practice and get the targets ready.

The ammunition allowed (244 common shell, 100 shrapnel, and 12 case shot per battery) is distributed by the regimental commander, who lays down how much is to be used in each kind of practice. In the table given below is shown an average distribution of time and ammunition, and it will be seen what a large proportion of both is given to firing by batteries, when the conduct of the practice is entirely in the hands of the captains, only the hour and place of firing being indicated by the regimental commander.

Description of Practice.	No. of days.	Common Shell.	Shrapnel.	Case.
Elementary practice with 6 guns ..	1	24	—	—
Instructional practice	2 to 3	60	28	—
Field firing by batteries { with 6 guns ..	3	72	36	12
{ with 4 guns ..	1	20	12	—
Field firing by <i>Abtheilungen</i> with 6-gun batteries	1	24	12	—
Inspectional practice (4-gun batteries) ..	1	24	12	—
Prize firing	1	20	—	—
	10 to 11	244	100	12

The two regiments of a brigade usually practise day about, that not firing being engaged in drill or field service. In the above table, when 6-gun batteries are mentioned, it means that the batteries are made up to that strength by two guns with their teams and drivers only from another battery. Great

importance is attached to the correct judging from the battery of the effect of the projectiles, but no assistance is ever given in this matter by the range party. The observations of both are compared afterwards, and remarks are made on them in the presence of all the officers and under-officers. Nobody is allowed, on any pretence, on the range or near the batteries during practice.

The various descriptions of practice require a few words of explanation.

Elementary practice is to teach the men the influence on the point of impact of variations in the elevation, of one wheel being higher than the other, of the powder being damp or dusty, &c.

Instructional practice is for the instruction of the officers and under-officers, and to teach them to observe the effects of their fire, and make the necessary corrections. On the first day, the firing is conducted by single guns, on the others by divisions, and it is forbidden for one gun or division to make use of information obtained, or corrections made by another.

Field firing is carried out with as near an approach to the conditions of actual warfare as possible, and the objects fired at are always such as would present themselves in war, and are concealed by the ground as they would be on the battle-field. Movable targets drawn by horses towards the battery by long wire ropes are frequently used, and puffs, ignited by strands of slow match, are placed in front of the targets to simulate the enemy's fire.

Inspectional practice is carried out by *Abtheilungen* in marching order, and is made as near an approach as possible to service conditions. The inspector is the senior artillery officer present.

Prize firing takes place by batteries. Each battery commander nominates four under-officers and eight lance-corporals or gunners, chosen for general smartness. These are divided into four squads, the eight men being distributed as Nos. 2 and 3 of each squad. Each squad fires five rounds at a 16' 3" x 16' 3" target at 600 yards on which twelve circles are painted, the inner one counting 12, the next 11, and so on. The winning under-officer receives a prize badge (a bar on the cuff), and four money prizes are given as follows:—To No. 2 of the winning squad, 6s.; No. 2 of the second squad, 4s. 6d.; No. 3 of the winning squad, 4s. 6d.; No. 3 of the second squad, 3s.

(d.) *Period of Manœuvres.*

From the practice ranges, the artillery proceed at once to the manœuvres with the other arms. Thus the period of regimental drills in the infantry and cavalry is entirely wanting in the artillery, its place being taken by the drills at the range on days when the regiment is not practising. All batteries take

part in manœuvres on a greater or smaller scale, an account of which will be found farther on.

In conclusion, a word may be said on the subject of inspections, and of the training of remounts.

The principle of the inspections is that the colonel of the regiment inspects the batteries in their various stages of instruction, the brigadier only when they have finished their courses of instruction.

The various inspections are as follows:—

Date.	Inspecting Officer.	Subject of Inspection.
Middle of January ..	Colonel	1. Riding on the snaffle.
Beginning of March ..	Ditto	2. One-year volunteers before definite incorporation.
	Ditto	3. Recruits' gun and foot drill.
End of March ..	Ditto	4. Riding on the bit.
	Ditto	5. Trumpeters' riding and sounding.
End of April	Ditto	6. Driving.
	Ditto	7. Regimental schools.
Beginning of May ..	Ditto	8. Foot and gun drill.
	Ditto	9. Gymnastics.
	Ditto	10. Theoretical examination.
	Ditto	11. Clothing and material.
End of May or beginning of June	Ditto	12. Battery drill.
End of July	Ditto	13. Drill in <i>Abtheilungen</i> .
	Ditto	14. Field service.
Middle of August ..	Brigadier	15. Shooting.
	Ditto	16. Regimental drill.
	Ditto	17. Field service.

In summer, the Army Corps Commander usually inspects the regiment, and once every two years the Brigadier inspects all the material, clothing, and equipment of the brigade, in which he is assisted by officials of the intendance.

The principles of the training of remounts are the same as in the cavalry, and the course lasts two years, but at the end of the first year the horses must be able to take their places in the battery in case of mobilisation. They are usually put into the ranks for regular work at the commencement of the battery drills in their second year of service. They are ridden by selected men (frequently by under-officers or trumpeters) under charge of a senior lieutenant. In a horse battery, the remounts form a ride by themselves; in the field artillery all those of an *Abtheilung* are trained together under one officer. The officer selected is usually one who has passed through the Riding Establishment at Hannover. The care displayed in the training is very great, and the horses are accustomed to be mounted from all sides and from the rear, at rest or in motion, and to let their riders move, turn round, face to the rear, or do anything in the saddle. In this matter, instructors are much assisted by the docile and even temperament of the Prussian horses.

FOOT ARTILLERY.

The instructional year is divided into five periods as follows:—

- 1st. From the dismissal to the reserve of the old soldiers to the arrival of the recruits.
- 2nd. From the arrival of the recruits to the date of their being fit to drill along with the older soldiers.
- 3rd. From the above date to the practice period.
- 4th. The annual practice.
- 5th. From the annual practice to the dismissal of the old soldiers.

The system of instruction, and of inspections, is the same as in the field artillery, the training of the men being entirely in the hands of the Captains of companies.

(a.) First Period.

The reserves of the Foot Artillery are dismissed to their homes usually by the 30th September, except in the case of the 2nd Regiment (see below under Coast Artillery) in which the 31st August is usually the date. In this period, the instruction in musketry of the old soldiers is perfected (each man being allowed 35 rounds of ball cartridge per annum), laboratory fatigues are performed, field service is practised (the men acting as infantry), and the officers and men destined to instruct the recruits are prepared for their duties.

(b.) Second Period.

A battalion of Foot Artillery receives 160 or 200 recruits annually, according as it is on the lower or higher establishment, or 40 to 50 per company, for the instruction of whom one officer, the vice-sergeant-major, and eight or nine under-officers, or lance-corporals, are told off. The recruits join in the first week of November (for coast artillery on the 1st October), and this period lasts till the 15th February or, in all, about three months. Drill hours are usually 8 to 11 A.M., and 2.30 to 5 P.M., with theoretical instruction from 6 to 7 P.M. The first fortnight is taken up with setting-up drill, squad drill, and gymnastics. Gun-drill is begun in the third week and laying in the fifth. After that date all are carried on simultaneously, and blank ammunition is fired. In this period the recruits learn the drill of one description of gun only, usually a 9, 12, or 15-centimètre gun on a siege carriage, the guns and stores being furnished from the local artillery depôt. For the instruction of the recruits there are allowed:—Per recruit, 10 friction tubes; per company, 25 rounds of blank cartridge, 40 friction tubes, and about 10 lbs. of powder.

The old soldiers are mostly at work in the artillery depôts, or on guard during this period.

(c.) *Third Period.*

As will be seen from the table showing the distribution of time on the practice ranges given on page 153, the annual practice takes place for the foot artillery at various dates, so nothing can be laid down as to the termination of this period. Recruits and old soldiers are mixed up together, and the following are the subjects of instruction :—

Foot Drill.—As a company and battalion of infantry, but never in three-rank formation.

Field Service, Musketry, Guard Duties.—The field service exercises comprehend precautions on the march, duties as escorts, defence of a village, defence of a siege battery against a sortie, bivouacs, &c.

Gun Drill and Arming of Works.—In this period the recruits learn the drill of the two other siege guns named above, in which they have not previously been instructed, and of the 15-centimetre mortar. The older soldiers also practise the drill of the heavier pieces. The material at the disposal of a fort artillery battalion with all its companies in one garrison consists of:—

- 4 9-centimètre guns,
4 bronze 12-centimètre guns,
4 steel " "
6 short 15-centimètre guns,
4 bronze " "
2 heavy " "
2 long " "
2 short 21-centimètre guns,
2 8 or 9-centimètre guns for flanking purposes,
2 9-centimètre mortars,
2 15-centimètre mortars,
1 21-centimètre mortar, and
2 rocket troughs,

all furnished with siege carriages and limbers, and small stores. At least one large work (bastion, cavalier, &c.) with the adjoining curtains of the fortress in which the battalion is stationed is put at its disposal for arming exercises, and also ground sufficient for the construction of a siege battery of four to six guns, with powder magazines, &c.

Preparation of gabions, fascines, &c. to be utilized in the following period.

Practical and theoretical instruction of the non-commissioned officers.

Preparatory exercises for the siege operations, such as construction of batteries, magazines, and shelters, arming of works,

observations of the strikes of projectiles by firing petards, arrangement of parks, artillery and siege depôts, &c.

Swimming.

(d.) *Fourth Period (annual practice).*

The detail of the ranges used by each regiment is given above. On these ranges, not only is firing practised, but also the construction and armament of batteries, making up of ammunition, &c. In the construction and armament exercises, active service conditions are aimed at as far as possible. The practice proper is divided into firing by single guns (7 days), firing by batteries (5 days), firing by a group of batteries (2 days), prize firing (1 day), and inspectional firing (1 day), much on the same principles as in the field artillery. The objects fired at are permanent works, masonry revetments, targets representing masonry, siege batteries, &c. The average quantity of ammunition allowed is 2,156 rounds per battalion, of which 1,000 are common, and 240 double shell, 416 shrapnel, 420 mortar shell, and 80 case shot. Of the mortar shell only 40 to 60 are fired with bursting charges. The distribution of the prizes for shooting is the same as in the field artillery.

(e.) *Fifth Period.*

This period is usually taken up with siege operations, but all the foot artillery do not take part in these operations annually. Thus in 1885 siege operations were carried out in August at Cologne, in which the 7th Regiment (stationed at Cologne) undertook the defence of two forts, which were attacked by the 3rd and 4th Regiments (from Mainz, Magdeburg, and Coblenz), and at Metz, in which the 2nd Bavarian Regiment undertook the defence of three forts, and the 8th and 12th Regiments their attack. In these manœuvres, only a certain portion of the siege and defence works are actually carried out, the remainder being merely marked. The regiments not taken for these operations carry out exercises in arming portions of the fortresses in which they are stationed, the companies being combined to form companies on a war footing.

The instruction of the 2nd Regiment, which is more specially trained for purposes of coast defence, is carried out on much the same plan as the above, but the drills are carried on with heavy guns for coast defence, and, in addition to firing over the land ranges, they fire over sea ranges also. As a rule, they use the pieces mounted on the works they have to man, and they execute no exercises in arming works. One-third of their officers are, however, attached to the regiments trained for siege and land fortress work for the period of the latter exercises. It seems probable that, when the transfer of all coast

defence works to the Admiralty is completed, this regiment will receive the same training as the others.

ENGINEERS.

The training of the engineer troops (pioneer battalions) in the German army is exclusively military, and in addition to their training in the execution of field works and bridging, of works of attack and defence in sieges, and of arrangements for water supply, huts and roads, they are trained in infantry drill. An Imperial Order of 29.1.85 lays down that "by reason of their training and armament they are as able to take part in actual fighting as other troops, although their special province is the execution of technical works in the presence of an enemy."

Thus the training of a pioneer in Germany is half military and half technical. From the date of the joining of the recruits—usually the first week in November—till the middle of February the training of a pioneer recruit is that of an infantry soldier, with the exception that formations in three ranks are not practised. In the middle of February, the recruits are mixed up with the old soldiers, and company and battalion drills are practiced, musketry being also carried on. In summer, practical instruction in pontooning, field works, mining, &c., is given, the latter exercises being only executed by the 4th Companies of each battalion, which are intended for siege and garrison duties, the former by the first three companies and comprising all branches of strictly field engineering. In August of each year, extensive engineer exercises are carried out. Thus at Graudenz in 1883, 8 miner and 1 field companies were assembled for siege operations, at Coblenz in 1884, 4 field and 9 miner companies were collected for the same, and in 1885 at Harburg-on-the-Elbe 12 field companies were exercised in pontooning operations on a large scale. In these exercises, troops of the other arms also take part, and a tactical idea usually underlies the technical operations. It may be remarked that all German pioneer battalions are stationed at towns situated on rivers, so that their instruction in bridging can be most successfully carried on.

After these technical exercises, the field pioneers invariably take part in the manoeuvres, and the order quoted above lays down that they are to be employed as far as possible in their technical work according to the tactical situation.

Submarine mining is in Germany a naval rather than a military matter, but still a company each of the 1st, 2nd, 9th, and 10th Battalions is put through a preliminary training of 6 weeks, and a practical course of instruction of 14 days in this subject.

Signalling is not yet established as a branch of instruction in the German engineers.

THE RAILWAY TROOPS.

Railway troops receive the same training as recruits in the pioneers, but their subsequent training is confined to traffic management in all its branches, and the construction, repair, and demolition of lines of railway. For the former purpose the Prussian railway troops have the entire charge of a military line, 30 miles long, laid by themselves from Berlin by Zossen to the artillery practice range in the forest of Kummersdorf, open to the public as far as Zossen (20 miles), with four stations, and crossing 16 masonry and 3 iron bridges, and 6 culverts. The traffic manager is a field officer, and is assisted by 3 lieutenants, and the engine staff is composed of 9 under-officers as engine drivers, and 18 privates as stokers. The train staff comprises 24 under-officers as guards, and 48 privates as brakemen, &c. A company is employed at a time on this line, the captain acting as traffic inspector, the other officers as line inspectors, and under-officers as station masters, and all the companies in turn take over these duties.

The construction and demolition part of the duties of the railway troops is, in Prussia, taught on the practice ground at Schönefeld near Berlin, where all the stores required are made available, liberally expended, and annually renewed. In addition, entire companies are also employed under their own officers in constructing or repairing lines of rail for the State or for private companies.

Thus in 1882 a detachment constructed a new line between Hirschberg and Schmiedeberg in Silesia, and frequently detachments have been employed in repairing bridges, embankments, &c., damaged by floods or accidents.

Every year, a detachment is sent to the riding establishment at Hanover, to give instruction to the cavalry officers and under-officers undergoing a course there in the repair and demolition of railways and telegraphs.

Ballooning is also a branch of the training of the railway troops. In 1884 a balloon detachment of 1 captain of the Railway Regiment, and 3 lieutenants and 30 non-commissioned officers and men from various corps, was formed to make experiments in this matter, in 1886 the number of men was increased to 50, and in 1887 the organization was made permanent. No results have as yet been published, but the fact of the detachment being made permanent appears to be a favourable omen.

THE AUTUMN MANŒUVRES.

The autumn manœuvres form the culminating point of the yearly period of instruction, and are taken part in by *all* troops of the army, except the foot artillery and railway troops. There

are two plans on which autumn manœuvres are carried out, the ordinary plan, executed by all army corps when not otherwise ordered, and the grand manœuvres executed by one or more army corps in each year, and generally in the presence of the Emperor. In the former case, the divisions of each corps are concentrated for a period of ten days, excluding two days of rest. All the infantry and cavalry of the division take part in these manœuvres, and the field artillery, pioneers, rifles, and train of the corps are divided among the divisions by the Corps Commander. Only the men actually required for guard duty are left in the garrisons, and on the western frontier troops of a neighbouring army corps are generally brought in to take over those duties, their own manœuvres being performed earlier. The ten days available are divided as follows:—

(a.) Four days of brigade manœuvres under the direction of the Brigadiers. Each brigade of infantry is divided into two parties, to which troops of the other arms are attached. Those manœuvres are generally so arranged that on the last day both brigades of the division are billeted near one another, ready to begin the next series. The main bodies are always billeted, while the outposts bivouac, the troops being given each a turn of bivouac in the three days.

(b.) Four days of field manœuvres of the division, divided into two portions, each commanded by a Brigadier-General, the whole directed by the Divisional Commander.

(c.) Two days of manœuvres against a supposed or marked enemy. A day may, however, be deducted from period *c* and added to *a* or *b*.

During the *b* and *c* manœuvres, the whole force may bivouac twice, and during the *b* manœuvres one-third of the men may be bivouacked each night, otherwise the troops are billeted on the inhabitants. Sometimes, if local circumstances permit of it and the expenses are not considerable, the two divisions of a corps may manœuvre against one another in the last period, but the total of 10 days must not be exceeded.

In the case of an army corps executing grand manœuvres, the series *a* and *b* are reduced to three days each. The number of bivouacs is also reduced to one night in the *a* series. After these come a grand parade before the Emperor, one day of manœuvres of the corps against a marked enemy, and three days of manœuvres of division against division, with a day of rest after the grand parade, which however may be utilised by the troops for their march to new billets near the manœuvre ground. In 1884, there were Imperial manœuvres for the 7th and 8th Corps, in which case each corps had a separate grand parade and day of manœuvres against a marked enemy, followed by three days of manœuvres of army corps against army corps.

It is laid down that the zones of country for manœuvres should be so chosen that the marches to them to and from the ordinary stations and then from one zone to another should be as short as possible, and that in choosing billets care should be taken to

change them as frequently as possible, so as to make the burden press equally on the inhabitants. The selection of the ground and the arrangement of the manœuvres form one of the most important duties of the General Staff of corps and divisions.

Manœuvres with a marked enemy are mainly intended as an exercise for General Officers in handling large bodies of troops, and the commander of the force gives instructions to the commander of the marked enemy as to what stages of an action he desires to have represented, and in general how he desires the fight to go. Very different are the manœuvres of two forces against one another. Here, the idea is to get as near an image of war as possible and each side receives the same general idea, a special idea being given for each day, and, as far as possible, the general continuity of the operations being kept up. Nothing is prescribed for the leaders of each force to do, only the object of the day's operations being indicated and the execution being left entirely to them. To introduce variety and also to keep their troops near their cantonments, marked troops may be added as required to either side. Each day's manœuvres is followed by a critique by the officer conducting it. It is laid down as a rule that troops are not to be called on to cover more than 20 English (4 German) miles a day including the marches from and to their billets during manœuvres, and if necessary billets should be changed daily. Considerations of supply or the arrival of provision columns should never be allowed to exercise an influence on the course of the manœuvre, and usually the march of these latter (generally made up of hired carriages) is directed for both parties by the officer superintending the manœuvre.

Very detailed instructions for the conduct of umpires are given in the regulations, but these need not be entered upon here.

ONE-YEAR VOLUNTEERS.

No special instructions have ever been issued for the training of one-year volunteers, except that, in the infantry, the thirteenth captains are to be entrusted with their instruction. The object of the whole course of training is to instruct these highly educated and intelligent men in such a manner as to secure a valuable and reliable body of reserve officers. The volunteers join in two batches, on the 1st April and 1st October, and in their first six months of service are put through a complete course of the drill of their arm, including lectures on theory in the evenings. At the end of this period those who have attained a sufficient degree of instruction and whose conduct has been faultless are promoted lance-corporals, and in the next six months they are taught the duties of non-commissioned and commissioned officers, and the obligations entailed by the position of an officer. After their year of service is accomplished, they have to undergo a practical and theo-

retical examination for the appointment of reserve officer, the details of which are given in Chapter I.

DRUMMERS, BUGLERS, AND BANDSMEN.

Each company of infantry has four drummers and buglers, who are recruited by two recruits who have some notion of music being selected each year, on the conclusion of the recruit drills. They are then trained to their respective instruments (one as a drummer and one as a bugler and fifer) by the battalion or regimental drum-major. This instruction is carried out during the period of company drills so that the men are able to take part in the battalion drills as drummers or fifers, but it goes without saying that their training is carried on throughout their service. In the cavalry and artillery, the trumpeters are recruited from three-year volunteers, and each learns to play on another instrument besides the trumpet, as in those arms they form the band also.

For regimental bands, the State allows 900 marks (45*l.*) a year to each line regiment, and the bands are in a great measure recruited by voluntary enlistment. If they are not up to their full establishment, the pay of the men wanting to complete is still allowed to go to the band fund, and, in addition, the latter receives from 450 to 600 marks a year from the savings on the clothing fund and 1,800 to 2,100 marks from officers' subscriptions, which are regulated according to rank. The number of bandsmen in a line regiment is only 10, but it is allowed to place 32 men from the ranks in the band, these being usually chosen from the drummers or buglers. Instruments for them are bought from the band fund. In Germany, military bands make a great deal of money by playing at concerts, balls, &c., and the individuals composing them make good incomes by private practice in orchestras, &c. In the latter case and when off duty they are allowed to wear plain clothes. The band must play at the mess as often as the officers require it, and, in addition, it is the custom for the band to play from time to time before the houses of married officers.

On discharge, some of the men are classed in the reserve as musicians, &c., the remainder as privates, and with this latter view all are put through a course of musketry while with their regiments.

STRETCHER BEARERS (KRANKENTRÄGER).

Every year, two men of good conduct in their second year of service per company of infantry and rifles, and one under-officer per battalion, are selected for a course of instruction as stretcher-bearers. The course is divided into three periods, the first two of which are conducted by the regimental medical officers and comprehend (1) lectures on anatomy, wounds, first aid to the injured, dressings, signs of death, and (2) stretcher drill, dressing wounds, &c. This course commences on the 1st

January and lasts till March, about 3 lectures or drills a week or 20 in all being held. At the end of May or in the beginning of June all the stretcher-bearers of a division, some 250 in number, are assembled for 10 days' training and are practised in the collection and dressing of sham wounded men, and the establishment and organisation of dressing stations. These men form in war the regimental stretcher-bearers, those of the bearer columns being taken from the reserve, selected men of which are trained for 14 days each year with the other reserve men (see below).

HOSPITAL ASSISTANTS.

(*Lazareth-Gehülfen.*)

Each company, squadron, and battery has one hospital assistant, whose duties are to assist the regimental medical officers in the hospitals. They are taken from men of good character, who can read, write, and sum, who have served six months in the ranks, and who volunteer for this service. They are chosen by the medical officers, and may be sent back to the ranks if found unfit. They are instructed by the medical officers, and for their first year are only classed as on probation (*Lehrling*). At the end of this time, on passing an examination, they are appointed assistants, with the rank of lance-corporal. Their course of instruction comprises all the minor branches of surgery and nursing, and first aid to the injured; on the march, at manoeuvres, &c., they always accompany their company, &c., and are provided with a case of surgical appliances.

These men frequently re-engage.

Another class of men employed in the hospitals are the sick attendants, or *Krankenwärter*, of whom every year twenty-six men per army corps are trained by the Medical Officers. They are chosen from men with at least a year's service, and perform an inferior class of duty in the hospitals (assistant dressers, nurses, &c.). Some of them are recruits, who, from bodily defects, are not fit for the ranks. These latter men receive no military training.

TRAINING OF THE RESERVE AND LANDWEHR.

As stated in Part I, each reserve soldier is liable to be called up twice in his period of reserve service for training for periods not exceeding eight weeks, and each Landwehr soldier for two such periods of eight to fourteen days each in his five years' service in the Landwehr of the 1st Ban. As a matter of fact, the average length of the training for which reserve and Landwehr men are called up is twelve days, which may be increased for artillery and engineers to twenty days. Every year, about the beginning of March, a Cabinet Order is issued detailing the number of men of both classes to be trained in the year, and it

may be noted that the vast bulk of these belong to the infantry. No cavalry have hitherto been called out, except such men as have been transferred to the reserve of the train as drivers. Usually the order has not specified the number of men of the reserve or Landwehr, but simply the total of both, the details being arranged by the army corps. In 1887, however, a distinction was made, and in that year there were called up, in Prussia and the States administered by the Prussian War Ministry, 107,000 reserve men of the infantry and rifles, and 14,814 reserve *and* Landwehr men of the other arms; total, 121,814.

In addition to these, 68,200 men of the infantry, and 4,800 of the rifles, belonging to the four youngest classes of the reserve, were called up for a twelve days' training, from the 7th to 18th February for instruction in the use of the new repeating rifle, 1887 was, therefore, quite an exceptional year as regards training of the reserve and Landwehr, and the object of the authorities was to put as many men of the reserve as possible through a course of instruction with the new rifle.

In 1888 the numbers to be called up in Prussia and the States administered by the Prussian War Ministry are as follows:—

Infantry (I, II, V, and VI Army Corps)	61,500 reserve only.
Balloon Detachment	40 " "
Infantry (IV, VII to XI, XIV and XV Army Corps)	40,700 reserve and Landwehr
Rifles	2,800 " "
Field Artillery	7,500 " "
Foot Artillery	3,800 " "
Pioneers	2,800 " "
Railway Regiment	400 " "
Train	4,683 " "
Total	123,723

The 40,700 infantry of reserve and Landwehr may include 4 cavalry reserve men per squadron, if required to increase the strength of the cavalry during the autumn manœuvres; further, the 7,500 Field Artillery men include 300 of the youngest class of cavalry reservists to be trained as drivers for the ammunition columns, and the 4,683 train men include 992 cavalry reservists.

In 1886 the numbers of reserve *and* Landwehr men called out in Prussia, &c., and Bavaria was as follows:—

	Prussia, &c.	Bavaria.
Infantry	91,700	7,330
Rifles	3,200	
Field Artillery	7,450	900
Foot Artillery	5,350	850
Pioneers	3,300	600
Railway Regiment	540	
Train	5,304	720
Total	115,844	10,400

In 1885, the number in Prussia, &c., was 116,520. All the above figures include 10 per cent. of non-commissioned officers.

The men are not all called up at one time, but their training is usually spread over the period from the 1st April to the middle of June. The infantry and foot artillery reserve and Landwehr men are generally formed into separate battalions; in other cases, detachments or companies only are attached to the peace units, but in all cases the cadres are entirely furnished by the regular army, and by those units of it which the men would have to rejoin on mobilisation. Each battalion is commanded by a major, with a lieutenant as acting adjutant, an assistant surgeon, an under-officer as acting paymaster, another as clerk, and one or two hospital assistants. A battalion has from two to four companies. If the men are reservists, the cadre of the company consists of one captain or first lieutenant, one or two lieutenants, one under-officer as sergeant-major, one as quartermaster-sergeant, one as instructor of musketry, and one hospital assistant, and the company numbers 12 to 16 under-officers, and 150 to 200 men of the reserve. Thus each regiment of the active army in which such a battalion is formed has to give up to it one field officer, two captains, two first lieutenants, five to nine lieutenants, and thirteen under-officers. In the case of a Landwehr company, the commander is often a Landwehr officer, and the others are one lieutenant of the line, and two or three of the Landwehr, with five under-officers of the active army (for functions as above), and 15 to 20 under-officers and 160 to 200 men of the Landwehr. Cooks, men for fatigues, &c., are furnished by the active troops, and clothing, arms, &c., are furnished from the stores of the line regiment, or from the artillery dépôts.

The officers and non-commissioned officers arrive at the place of training one day in advance of the men, and usually the under-officers are put through two hours' drill and have portions of the military code read to them. The first day of the training of the men is taken up in clothing and arming them, and telling them off to companies, and the last day (twelfth) in receiving clothing and arms into store, and despatching the men to their homes. Half of the eleventh day is taken up by an inspection by the regimental commander for reserve men, or by the brigade commander for those of the Landwehr, so that, deducting a Sunday, not more than eight or nine days remain for actual drill. The hours of drill are usually 7 to 11 A.M. and 2 to 6 P.M., with theoretical lectures from 7 to 8 P.M. Fourteen to sixteen drills may be counted upon, and these are divided approximately as follows:—three squad drills, two to three company drills, three battalion drills, one or two route marches by battalions combined with field service, four drills at musketry (each man firing fifteen rounds, but not more than five on any one day), and one drill field firing (five rounds a man). The marches to and from the shooting ranges are utilised to practise advanced guards, &c.

Such is the general outline of the training of the men of the infantry. Sometimes in the other arms the reserve men are

kept as long as three weeks, but the general programme remains the same.

In the train, in the autumns of 1886 and 1887, in the Guard and 2nd Army Corps, each four companies, each with one captain, one first lieutenant, two second lieutenants, nine under-officers, and 66 privates, and in the other Prussian Corps, and the 25th Division, each two companies of one captain, one first lieutenant, three second lieutenants, 11 under-officers, and 84 privates were formed out of reserve men (*cadres regular*) for 16 days' training. For the first-named companies 20 riding, 84 draught and 4 "*Krümpers*" horses were detailed to horse 20 wagons and two carts, and for the latter 16 riding, 64 draught, and four "*Krümpers*" horses for 16 wagons. These were taken from cast horses of the cavalry and artillery. Only one company in each corps was trained at a time. In addition, in three corps 80, in the remainder 64, and in the 25th Division 32 privates of the cavalry reserve were called out in May for training as drivers for twenty days, no special *cadres* being provided, and in five corps sanitary detachments of 1 captain, 1 first lieutenant, 1 second lieutenant, 18 under-officers, 4 hospital assistants, 4 buglers, and 174 privates were trained for 12 or 13 days as bearer companies.

TRAINING OF THE ERSATZ RESERVE.

With the annual exercises of the reserve and Landwehr, who are all old soldiers, must by no means be confounded those of the Ersatz Reserve men, who have never served in the active army. Certain of these men, as explained in Part I, are put through a course of three trainings, one of ten weeks, one of six, and one of four weeks, each in three separate years, which need not be consecutive. These trainings take place from the middle of August to the beginning of November, except for the train and foot artillery, which commence their trainings on the 1st July and 1st September, respectively. The *cadres* are furnished by the active army, and in especial by those regiments to join which the men would be called up on mobilisation. As, however, this period is that in which the annual manoeuvres fall, it is allowed to call up officers and under-officers of the reserve to fill up the gaps in the regiments, such being deducted from the numbers of reserve men called up in the spring. Only Ersatz Reserve men of the infantry, rifles, foot artillery, pioneers, and train are called out for training. As a rule, for men in their first training, each regiment of infantry forms a company of 100 men, each battalion of rifles a section of 25 men, each battalion of foot artillery a company of 48 men, each pioneer battalion a company of 48 men, and each train battalion a company of 60 to 90 men. For these companies, &c., *cadres* are provided as follows:—

	First Lieut.	Second Lieut.	Sergt.- Major.	Under- Officers.	Lance- Corporals.
Company of Infantry ..	1	2	1	7	7
Section of Rifles ..	—	1	—	2	2
Company of Foot Artillery ..	1	2	1	5	5
Company of Pioneers ..	1	2	1	5	5
Company of Train ..	1	1	1	5	4

besides drummers, buglers, and workmen. Clothing and arms are issued from the stores of the battalion concerned, for which compensation is allowed to it. For the pioneers, strongly built men are selected who are by trade carpenters or boatmen, for the train, men accustomed to horses, and only men with good sight are taken for the rifles. The Guards train no men of the Ersatz Reserve as, their effective in peace being higher than that of the rest of the army in the arms concerned, they do not require those men on mobilisation.

The numbers to be called out in 1888 are as follows:—

For the 1st (ten weeks') training	..	..	..	12,000 men.
„ 2nd (six weeks') ..	..	..	..	10,700 „
„ 3rd (four weeks') ..	..	..	..	10,250 „

The instruction given is confined to those branches likely to be most useful on active service in the field, so that these men may, soon after their incorporation in the dépôt battalions on mobilisation, be fit to be sent as drafts to the troops on active service. Thus attention is principally paid to musketry, drill in broken ground, outpost duty, &c., in the infantry, to simple field works in the pioneers, and to drill with one species of ordnance in the foot artillery. In the first training, in the infantry, 45 rounds of ball ammunition, 15 of blank, and 10 of practice ammunition for use indoors are allowed; riflemen are allowed 15 extra rounds of ball ammunition, and foot artillery 12 of ball and 5 of blank. Four hundred mètres is the longest range practiced at in the infantry, and at that only 5 rounds are fired, the remainder being expended at 250 mètres and under. In the second training, the allowance of ammunition is 40 rounds. Five rounds are fired at 400 mètres, the remainder at 200 or under or in field firing (at least 5 rounds). In the third training 40 rounds of ball are allowed; 500 mètres is the longest range, and 15 rounds are expended in field firing. Gymnastics with appliances, and bayonet fighting, as well as all parade movements are excluded from this course, which is made most eminently practical.

The men called up for a second (six weeks') training are summoned for the last six weeks of the ten weeks' drill of the men undergoing their first training. In the infantry, they are formed into special companies, in the other arms they are incorporated with those already formed.* Those called up for

* In the infantry, special cadres are provided for these men, in the other arms the existing cadres are strengthened proportionately.

their third training are summoned for the last four weeks (the foot artillery for the first four weeks) of the above-mentioned ten weeks period. In the foot artillery, the last category is incorporated in the Ersatz Reserve companies, in the other arms they are put into the ranks of the line companies.

The custom has recently been for the Ersatz Reserve men to be called up for their first two trainings in two successive years, and for the third and fourth at intervals of two years.

CHAPTER XI.

TACTICAL NOTES.

The following notes are condensed from the various drill regulations, &c. They have no pretence to give a resumé of the tactical methods of the German army, but merely indicate the regulation forms in which that army differs from our own.

INFANTRY.

The quick step of the German infantry is 8 mètres (31½ inches) long, and the time is 112 to a minute.

A company is formed for parade purposes in three ranks,* the tallest men in the front rank, each rank sized from right to left, and with a distance between ranks from back to chest of four-fifths of a pace. Good shots are now no longer (as formerly) selected for the third rank, but all are equally divided. Blank files, if necessary, are left in the second rank. A company is divided into two sections (*Zug*) and these again, if 16 files strong or over that number, into half-sections (*Halb-Zug*), which in their turn are subdivided into squads (*Sektion*). A section of 15 files or under is divided only into squads. A squad must not be stronger than six or weaker than four files. Sections are commanded by officers, squads by under-officers. The parade formation of a company is shown in Plate I. It should be distinctly understood that the above formation is purely for parade purposes and is one of those relics of the Frederician time still so fondly cherished in the German army. The manœuvring and drill formation of a company is the company column (*Kompagnie-Kolonne*). To form company column from the above formation, the third rank of one section† turns right about and retires until it is 14 paces from its front rank. The other section turns towards the first named section and takes its place with its first and second ranks

* According to a Cabinet Order of the 26th March, 1888, it would appear that the third rank may possibly be abolished before long.

† The left section in a company on the right of the colour (i.e., the centre) of a battalion, and *vice versâ*.

7 paces in rear of the front rank of the first named section, its third rank forming in rear of the other third rank (see Plate I.) The new section thus formed is termed the Skirmishing Section (*Schützen-Zug*) and takes the number of its company. The remaining sections are numbered right through the battalion, thus the 4th company consists of the 7th and 8th sections and 4th skirmishing section. An officer commands each section. Thus a company forms a handy column which can move and change its direction with great rapidity and adapt itself to the ground. On a change of direction being ordered, the leading section wheels the required amount and the remainder double to their new relative positions.

A battalion is formed of four companies. On parade they are placed in their order of numbers from right to left, and these numbers (as also those of the sections) are retained whatever place the company finds itself in. In a battalion formed in line the colour party is between the 4th and 5th sections. There is no interval between the companies. From line, open column of sections, half-sections, or squads may be formed by wheeling to a flank, or these columns may be formed in rear of a flank or the centre at full or half distance, but all these are mere parade formations, practised with none the less energy, however, in the German infantry, whose motto is that the basis of all things is steady parade drill. Paragraph 91 of the drill book lays down that the formation in company columns is the fundamental fighting formation for infantry, and that, as soon as a battalion comes under fire, this formation is to be assumed. In line of company columns the 1st and 2nd companies are left in front, the 3rd and 4th right in front, and the 2nd and 3rd are close together (see Plate I.). This formation is, however, by no means adhered to in action, the companies being placed according to the ground. The rendezvous formation and that in which a battalion in close order manoeuvres is the column in rear of the centre (*Kolonne nach der Mitte*), which is shown in Plate I. Battalion square may be formed from this column, and it may be noted that the plate showing the formation of this square is the only one, except one for a parade of a division, in the drill book.

If a company is ordered to skirmish, it at first extends half a section (usually of the skirmishing section) at 6 paces interval (on open ground) between the files, the remaining half of the section following in support and the other two forming the company reserve. The officer of the extended section remains with his shooting line and controls its fire, assisted by the under-officers in charge of squads. The officer and under-officers judge the ranges and must, if necessary, themselves fire trial shots. As a rule, a skirmishing line only fires when halted. If it is desired to fire while advancing, men are named and ordered to double out to the front and fire. Firing is either individual or by volleys of sections or squads, and in the former case may be either "slow," when the men of a file fire

alternately, or "quick," when each man fires independently. Magazine fire is only employed when specially ordered. A shooting line is only reinforced when it comes upon some resistance which stops its further advance; the reinforcement usually takes the form of a prolongation of the line in the initial stages of an attack, and the mixing up of sections and squads is avoided as far as possible. The support remains in close order, near enough to the shooting line to give it timely support, and covered as far as possible from hostile fire. A distance of 150 paces is about the normal. When the half-section in support is moved up into the shooting line, another section is at once sent up from the main body of the company to act as support, and, if the whole company is extended, at least one squad should be kept as a reserve. A cavalry attack is received either in the actual position occupied or groups or company square are formed. In the former case, the supports double up in close order into the shooting line and fire volleys or employ magazine fire, in which the men of the shooting line in the vicinity join. The concluding paragraph of the instructions for a company runs thus:—"A company must be able to carry out the simple formations and movements necessary in action under all circumstances, by day and by night, without telling off, with changed ranks, &c., &c. It must be able to deploy to the right or left or to both flanks, and to form line to a flank or to the rear in close or extended order with the greatest speed and accuracy, and as quickly to assume another formation adapted to another phase of an action. No hard and fast forms should be laid down for this, thereby burdening the memory of the soldier, but the company must be so trained that it is always kept in hand by its captain, and can, with perfect attention to his orders, carry out even movements which have not previously been specially practiced."

The German regulations are very chary of laying down any attack formations for a battalion, and only hint at one for attack which may be of use when several battalions are working together. The two flank companies are drawn forward to form a first or fighting line (*Vortreffen*), the remaining two following as main line or reserve (*Haupttreffen*), either formed as a half battalion or in any other formation which suits the ground. This formation, with the distances recommended for the drill-ground, is shown in Plate II. Frequently, however, the action is begun by one company only, another being afterwards brought into the fighting line alongside of it. The main point for a Battalion Commander to strive to observe is to keep his battalion in hand and not unnecessarily to fraction it. Detached Company Commanders are to strive as soon as possible to rejoin their battalion when their task is completed. "A battalion must be able to deploy to any side in company columns quickly and with accuracy on a short order from its commander, and as quickly to reform. The captains lead their companies by the shortest road to the position assigned to them, and make all dispositions required by the situation. A battalion is con-

sidered to be well drilled if the company chiefs understand how, on a short order from their Commander, to work together for a common object without the actual leadership of the whole for one instant going out of the hands of the Commander." It is a cardinal principle that skirmishers should always be supported by the company to which they belong, but no regulations are made for the formation, &c., of the fighting line companies, as such would only lame the spirit and self-reliance of their leaders. As a rule, all movements of the shooting line are made at the quick, but, if open ground has to be crossed under fire, it is allowed to move at the double. Rushes are, however, discouraged as tending to exhaust the men, and are never employed until the shooting line is within 500 paces of the enemy's position. Officers are allowed to use a whistle to attract their men's attention, but all set whistle-calls are forbidden.

The limit at which individual skirmishers may fire is laid down in the German regulations at 450 mètres (495 yards), beyond that distance volley firing is the rule. When the distance is not exactly known, and generally beyond 600 mètres, two elevations are employed, with a difference between them of 100 mètres, and against moving objects more than 400 mètres distant several elevations varying by 100 mètres, are employed. 1,200 mètres is considered the limit of even mass fire. "Quick individual" fire is discouraged as much as possible and it is laid down that magazine fire is only to be employed when the bayonet attack on a hostile position is being prepared, when a hostile bayonet attack or cavalry charge is being met, and as a means of causing loss to a retreating enemy. As a rule, 300 mètres is the outside range at which magazine fire should be employed.

From the above it will be seen that the Germans are no friends to wasting ammunition at long ranges. "*Rücksichtsloses Drauflosgehen*" ("forward at any price") is their motto, and their firm belief is that the quicker they can get to close ranges where they can pour in a murderous fire with their weapons of precision, to be followed by a bayonet attack, the easier will be their victory. Hence the recent adoption of the repeating rifle, first of all great powers of Europe, and German officers do not fear that their men will waste their ammunition at long ranges. Their temperament is too cool and their fire discipline too good for that. The main principle upon which the firing of the shooting line is conducted is that it should be concentrated upon important points and maintained with great intensity for short periods, succeeded by pauses, by means of which latter the fire is kept in hand.

On the subject of the defensive not much is said in the regulations. If forced to take up this attitude, the principle is to make the shooting line as strong as possible from the first and to choose a position with a clear field of fire. Detached posts in front are to be avoided, and the troops echeloned deep on the position so as to be prepared against flank attacks.

“ Our infantry, well trained in shooting as it is, can repulse by its fire the frontal attack of even the most desperate enemy. . . . This conviction must be aroused and nourished in the infantry. It may say to itself that it is unattackable in front, and that it has nothing to fear until it turns its back.” And any observer of the German army may hear these truths dinned into the ears of the men at every opportunity by their officers. Everything is done to foster the offensive spirit and at the same time to teach the men that, if forced to stand on the defensive, they are bound to win or die where they stand.

A brigade* of infantry is composed, as a general rule, of two regiments of three battalions each. In rendezvous formation, it stands in two lines, the junior regiment in first, the senior in second line, each battalion in column in rear of the centre with 30 paces distance between the lines and 20 paces interval between battalions. Three lines are formed, two battalions in each, if a brigade has to act as a separate force and carry out an action alone. In action, a brigade invariably forms two or three lines, with, on an average, about 400 paces distance between lines. A battalion of the first line is named as battalion of direction, and all others conform to its movements, the formations in which the various lines move to the attack being determined by the ground and the enemy's fire. As far as possible, the mixing up of regiments is avoided, and with this view the two regiments of a brigade are frequently placed side by side with one or more battalions of each in each line, so that, when it becomes necessary to throw the second line into action to carry forward the first, the battalions of the latter find themselves supported by others of their own regiment. The disposal of his own battalions is, however, left to the Brigadier, who selects officers to command each line. As a rule, the fighting line of a brigade, or in fact of any body of troops, is never relieved. Once a fight begun, it is carried through to the end by the same men.

CAVALRY.

In the German cavalry, the paces recognised are the walk, trot, and gallop. At a walk 125 paces (88 metres or 31½ inches each), at a trot 300, and at a gallop 500 paces are traversed in a minute. In the ranks, the men are placed stirrup to stirrup, each man occupying one pace, and touch and dressing are kept by the centre.

The squadron is the tactical unit of cavalry. It is drawn up in two ranks and divided into four *Züge*† of the same number of files. If the *Züge* are weaker than 10 files, only three or fewer *Züge* are formed. They are numbered from right to left and are led by officers, an under-officer being on

* No instructions for the drill of a regiment are given in the German Regulations.

† “ Half-troops ” is the nearest English equivalent, but as this unit does not exist in our service the German word has been retained.

the right and left flanks of the front rank of each *Zug*. Supernumerary officers and under-officers are placed in the serrefile rank. Each *Zug* is told off in threes from right to left, and each such group of three front and three rear rank men is termed an "*Abmarsch*." The flank under-officers are not included in the numbering off. The normal formation of a squadron in line is shown in Plate III, and it need only be remarked that, in lancer squadrons, the officers are 3 paces in front of the front rank and the distance between ranks is likewise 3 paces. A squadron may either be formed in line, in column of *Züge* (at wheeling distance), in half column, in column of threes, or in double file. The formation in column of *Züge* (*Zug-Kolonne*) is sufficiently explained by the figure in Plate III. It can be assumed either by wheeling to a flank or by advancing from a flank. Half-column (*Halb-Kolonne*) is a formation much used for gaining ground to the front and to a flank at the same time, or for an advance when it is meant to wheel into line and attack to a flank. It is assumed by a half-wheel of *Züge* to the right or left, or by an advance from a flank by one *Zug*, the remainder inclining to that flank and following in echelon, the inner flank of the leading *Zug* overlapping the outer flank of the following one (see Plate IV). In column of threes (*Kolonne zu Dreien*) there is no distance between the successive threes, but each man rides on the interval to the right or left of the front or rear rank man preceding him (see Plate IV). A squadron is also numbered off in twos from right to left in each *Zug*, but this is only for purposes of dismounting, in which the even files rein back.

Cavalry are frequently practised in drilling without word of command upon sigus made by the Squadron or Regimental Commanders.

A regiment consists in peace of five, in war of four squadrons. The interval between squadrons in line is 6 paces, and a regiment can either be formed in line (*Linie*), in line of squadron columns (*Regiment in Eskadrons-Kolonnen*), in line of squadron columns wheeled to the right (half-right, left, half-left) (*Regiment in nach der rechten Flanke abgeschwenkten Eskadrons-Kolonnen*), in half-columns of squadron column (*Halb-Kolonne in Teten*), in half-column of squadrons (*Halb-Kolonne in Eskadrons*), in regimental column (*Regiments-Kolonne*) when it can move to a flank by a right (left) or half-right (half-left) wheel of *Züge*, in column of *Züge* (*Zug-Kolonne*), in half-column (*Halb-Kolonne*), or in column of threes. In the latter case the squadrons follow one another at 6 paces distance; the remaining formations are shown in Plates V and VI.

Each *Zug* has two selected men as ground scouts (*Eklairesseurs*) whose function it is, when ordered to the front, to reconnoitre the ground to be passed over. They are commanded by an under-officer for a single squadron, by an officer for a regiment. A single squadron sends out fighting patrols

(*Gefechts-Patrouillen*), of 1 under-officer and 2 men, to each flank to watch the enemy. For a regiment or a larger body, officers' patrols are usually sent out. Those do not take part in a charge, but remain throughout in observation. Whole *Züge* may be sent out in extended order as flankers, if required. They may use their carbines from horseback, if necessary.

A brigade of cavalry consists of 2 to 4 regiments, and may be formed in line with intervals of 15 paces between regiments, or with the regiments in any of the formations given above, the interval of 15 paces being always preserved (*plus* deploying interval if necessary). Brigade column (*Brigade-Kolonne*) consists of two regimental columns side by side with 15 paces interval.

An attack against cavalry is made in close order, but to keep the horses in wind for the pursuit, the trot is maintained as long as possible, unless the enemy can be caught while in the act of manœuvring, when the gallop may be employed over a long distance to surprise him. In a pursuit, formed bodies always follow in support. Against infantry, the gallop is assumed earlier, so as to escape long exposure to fire, and, as infantry is equally strong in front and flank, the shortest way at them is always chosen. Only against disordered infantry may cavalry attack in one line. Usually such an attack will be made in two or three lines with 200 paces distance at the outside between them. Artillery is best attacked in flank, a portion of the cavalry turning against the escort, but it may be necessary to attack in front, in which case two lines are formed, the first line in extended order in rank entire, the files being extended at 1, 2, or 3 paces, and the rear rank men coming up into line with their front rank men. In second line, squadrons in close order follow with wide intervals, at a distance of 200 yards. A third line opposes any cavalry trying to save the guns. The gallop is assumed as soon as possible.

"In a battle, crises may occur which demand the employment of cavalry against unshaken infantry and artillery, regardless of results. Success can then only be attained by uniting masses of cavalry and pushing the attack home."

A single squadron usually attacks formed in line. Against cavalry, a regiment will also attack in line, but one squadron may be echeloned so as to be able eventually to attack the flank of the enemy. A regiment which has not time to form line may attack in echelon. Larger bodies of cavalry form several lines.

Cavalry cry "Hurrah!" at the moment of the shock.

No composition for cavalry divisions is laid down in the regulations, but it is probable that on active service a division will be composed of three brigades of two regiments each, one of heavy (cuirassiers and lancers), and two of light cavalry, with two or three batteries of horse artillery. The brigades are named after their commanders.

A division of cavalry engaged against cavalry will usually

be divided into three lines (*Treffen*) of unequal strength. Formerly (prior to 1886), a brigade was placed in each line, but it is now laid down that the first object to be aimed at is to secure the victory of the first line, and consequently its relative strength has been much increased. As a rule, half the available squadrons are placed in first line, and its duty is to carry out the main attack against the enemy. The duty of the second line is to directly support the first and ensure its success. Part of its squadrons are placed directly in rear of the first line at wide intervals at 300 paces from it, the remainder overlap one or both flanks of the first line and thus protect them from being turned. About one-third of the entire division may be in second line. If one flank of the first line is specially threatened, the outflanking second line squadrons may be brought up to a distance of 150 paces from it. The third line consists of about one-sixth of the division (a regiment probably), and forms the reserve at the disposal of the divisional commander. It follows the first line at a distance of 450 paces. The distances given above are those which should be assumed at the moment of contact. The leader of a cavalry division is given perfect liberty of action in an engagement, and never requires to wait for orders to attack. He only very exceptionally gives words of command or sounds calls, but sends orders to leaders of lines by orderly officers. Leaders of lines personally lead their troops to the attack. As a rule, the first line would remain formed in line of squadron columns until before the gallop was begun, when line would be formed. The second line would also be in line of squadron columns, and the third in regimental column.

Against infantry, each line would be composed of a brigade, and they would follow one another at 200 paces distance, one squadron of each of the second and third lines outflanking that in front of them on each flank.

In the event of "several" cavalry divisions being united for a decisive blow in a battle, they would be placed under one command and drawn up alongside one another, each in three lines, while one or more brigades would be echeloned on the exposed flank to protect it.

The occasions on which cavalry may dismount to fight on foot are governed by the same rules as in the British cavalry. Nos. 1 and 2 of each *Abmarsch* dismount, passing their snaffle reins (and lances) to No. 3, hook up their swords, and form up by *Züge* in two ranks. The men of each *Zug* of a squadron are divided into two groups (*Gruppen*) under under-officers, and two *Züge* are united under the command of an officer. A mounted reserve is always kept. The led horses are under the command of an officer, and with him are the serjeant-major, and one under-officer per *Zug*. Previous to dismounting, each man takes the extra cartridges from his wallets, and, if necessary, those of the Nos. 3 may also be given to the dismounted men. The officers in direct command of

the dismounted men all dismount, and use a whistle to call their men's attention.

An attack should be carried out with the utmost energy and decision. At first, a support may be kept, if the force or position of the enemy is uncertain, but later on this should be used to reinforce or prolong the fighting line. On the defensive, fire should be opened at the longest possible ranges to delay the enemy.

The mounted reserve takes advantage of any opportunity of attacking the enemy, and protects the led horses or the mounting of the fighting line.

In none of the German regulations are any rules to be found for cavalry divisions covering the advance of an army. The formations and means of gaining information employed must of course vary with the proximity of the enemy, the nature of the country, and the network of roads, but the late General von Schmidt in his "*Instruktionen*" gives as a type a cavalry division covering a front of from 18 to 24 miles. Two brigades are in advance each with one regiment in first and one in second line. Each first line regiment covers a front of 9 to 14 miles by pushing forward to a distance of 1 to 2 miles two or three contact squadrons, which in their turn send out officers' patrols. The remainder of the regiment follows in rear of the centre. The second line regiment of each brigade follows its advanced regiment at a distance of from 2 to 3 miles, and the third brigade follows in rear of the centre of the division at from 4 to 5 miles in rear of the advanced brigades. General von Schmidt was in favour of attaching a battery of horse artillery to each brigade, but the German artillery regulations now lay down that the horse artillery of a cavalry division is to be kept concentrated, and this view is supported by the majority of later writers. Cardinal von Widdern in his "*Handbuch*" takes the case of a division marching on one, two, or three roads. In the former case, a light brigade with a battery (see remark above) will form the advanced guard, pushing out a vanguard, flanking squadrons, and officers' patrols, the main body following concentrated, and this he recommends when in the immediate proximity of the enemy, as then success depends on the timely concentration of all columns, and this can never be made perfectly certain if the division is on several roads. If two roads are available, the heavy brigade, with a light brigade as advanced guard, will move on the more important one, the other route being followed by the third brigade. If three roads can be followed, and if the enemy be distant, and a large front has to be covered, a brigade may take each road, and in this case a battery may accompany each.

Mounted infantry is unknown in the German army. If infantry are required to keep up with cavalry for any particular object, they are placed in wagons and follow in rear of the of the main body.

FIELD AND HORSE ARTILLERY.

A field or horse battery consists of six guns, eight ammunition wagons, three store wagons, and one field forge.* The guns are numbered from right to left, and the battery is divided into three divisions, also numbered from right to left, and commanded by officers, or, if officers are not available, by under-officers, who take the same places on parade as officers, unlike the practice in the British artillery. In peace, most batteries consist of four guns only, and the field exercise only concerns itself with the drill of such for field artillery.

A battery may be formed in line, either at full or at close interval (*mit geöffneten or geschlossenen Zwischenräumen*). In the former case, the interval, measured from gun to gun, is twenty paces, in the latter, five paces, and in Plates VII and VIII are shewn the positions of all ranks in line in a field battery of four guns at full interval, and in a horse battery of six guns at close interval. The column formations are column of divisions (*Zug-Kolonne*) at full or close interval, in which case the distance from the gun muzzles of the leading division to the heads of the leaders of the rear division is twenty-two paces, and column of route (*Kolonne zu einem*), when the distance between carriages is four paces. For horse artillery, in which the detachments always follow their guns, the distance in column of divisions is thirteen paces from nose to croup, and in column of route four paces. The manoeuvres of a battery are much the same as in the British service.

German artillery rarely works by batteries but generally by divisions (*Abtheilungen*) of three or four batteries. Such may be formed in line (intervals between batteries, twenty paces), column of route (distances, twenty paces between batteries), column of divisions (distances, twenty-two paces), echelon, line of columns of divisions at deploying interval (*Abtheilung in Batterie-Kolonnen*), or in *Abtheilung* column (*Abtheilungs-Kolonne*). The latter is a favourite manoeuvring formation, and is shown in Plate VIII.

A gun is served by 1 non-commissioned officer in charge, and 6 men, numbered from 1 to 6. Their duties are as follows:—

The non-commissioned officer fixes fuzes and primers, looks after the clinometer, and commands. He has a fuze-pocket and fuze-key.

No. 1 stands in rear of and half a pace outside of the right gun wheel and fires. He has a tube-pocket and lanyard.

No. 2 stands in rear of and half a pace outside of the left gun wheel, opens and closes the breech, rams home, and lays. He has a damp rag, and a rammer.

No. 3 stands opposite the trail plate eye, in line with No. 1, sponges, and mans the handspike. He has a sponge.

* Besides a provision wagon and, in horse batteries, a forage wagon.

Nos. 4 and 5 stand facing the gun half a pace outside the off and near limber wheels respectively, and in line with the limber-hook. (The limber in action, on drill parade, is 8 paces in rear of the gun, the horses facing to the rear.)

No. 4 carries up ammunition and loads. He has a cartridge-pocket and strap.

No. 5 opens the limber box and supplies No. 4 with ammunition. He has a shell lifter.

No. 6 is a spare number, and stands outside of and in line with the off limber wheel.

In the German service, artillery comes into action outside of the effective sphere of infantry fire, but never hesitates to go in to close quarters when required. As a rule, 2,400 mètres (2,640 yards) is considered the extreme limit of effective fire. As far as possible, the ideal striven for is to gain and hold a mastery over the enemy's artillery as soon as possible, and this is done by placing the guns far forward in the columns of route, pushing them boldly forward in the initial stages of the action, and using them in large masses. A previous reconnaissance of the ground by the cavalry must precede the action of the artillery. Artillery fights only exceptionally by single batteries, as a rule by *Abtheilungen* or regiments. The action of artillery masses is held to be decisive in an offensive action in preparing the attack of the infantry, and in breaking down the power of resistance of the defenders. The choice of an object depends on the situation; as a rule the most prominent hostile arm for the time being is fired at. In an offensive battle, this is usually the defender's artillery, which must first be silenced or weakened before the infantry attack can be carried out. This preparation should be carried out without changing position, as long as friend can be distinguished from foe and the effect of the shells can be judged, and as long as no danger from their own artillery is to be apprehended for the attacker's infantry. Flanking or dominating positions should, therefore, be first chosen for the guns. Directly any of the above circumstances happen, the artillery must go in to closer ranges, and may even closely accompany the infantry. When the attacking infantry is so close that it is impossible any longer to continue the fire on the point of attack, the guns engage any hostile batteries still in action, and prepare to cover the retreat of the infantry, if necessary.

On the defensive, if the guns are inferior in number to the attacker's, they should be withdrawn at first, so as to come into action with advantage in the later stages of the defence.

Horse batteries attached to a cavalry division always act under one command, and generally on that flank of the division which is least protected by the ground, or by other troops.

Special escorts are usually given to the horse artillery, acting with a cavalry division, but field artillery trusts to the protection of the nearest troops, calling upon them, if necessary, for a special escort.

Changes of position are made as seldom as possible, on

account of the difficulty in picking up the range quickly again, and short changes of a few hundred yards, to escape hostile fire, are forbidden. Changes to the front are carried out at a trot or gallop, those to the rear are begun at a walk. If a battery runs short of ammunition, it remains in action all the same, until a fresh supply arrives, and batteries once in action are, as a rule, never withdrawn.

The commander of the artillery with any body of troops remains with the commander of the whole during the preliminary reconnaissance, but directly the fight begins he takes personal command of his guns. He rides forward to choose a position, and in this matter pays more attention to a free field of fire than to cover for his guns. He then sends orders for his batteries to come up to the position and come into action, and this is done either in line or in column of route. As a rule guns should come into action by a line perpendicular to that which is to be their front, all flank movements being avoided. The interval between guns in action should not be less than 10 nor greater than 40 paces. The officer conducting the firing remains mounted and posts himself usually on that flank of the battery from which he can best observe the fire, and not so far off as to make his orders unheard. Firing is always from one flank of the battery to the other. Under ordinary circumstances, one shot every 15 or 20 seconds is considered a fair rate of fire, but for close quarters and at decisive moments this may be quickened to a quick fire (*Schnell-feuer*) of one shot in 6 to 8 seconds. The finding of the range is one of the most important duties of a battery commander, and the method employed is explained below. If artillery comes into action on ground already swept by the enemy's fire, it is recommended to have the guns loaded with common shell, percussion fuze, and the object to be fired at told off beforehand. On an *Abtheilung* coming into action, its commander details the objects the various batteries are to fire at, and the projectile to be used, but he leaves to the battery commanders the duty of finding the range. It is only in exceptional cases that he takes this into his own hands. A battery joining a group in action ascertains from the latter the range as an aid in the determination of its own. Firing over the heads of other troops is to be avoided as far as possible.

The following is the German mode of finding the range with common shell against stationary objects. It is called *Gabelschieszen*. If the first round is short, the elevation is at once increased by about 200 mètres until two successive shells have been planted, one in front of and one beyond the object; the contrary is the case if the first round is over. The range is then halved twice till the length of the zone (*Gabel*) in which the projectiles fall is reduced to 50 mètres. Six or eight shells in succession are then fired at the range thus determined. If more than half the shells are short, the range is increased by 25 mètres, and another group of six or eight shells is fired off. If

fewer than one quarter of the rounds are short, the range is diminished by 25 mètres and another group is fired off. Finally if from one-quarter to one-half of the rounds are short the range is supposed to be correctly found. Once found, no correction in the range is allowed to officers commanding divisions, unless they find that their shells are always short or always over, when they may order a correction of ± 25 mètres. They order all lateral corrections of the tangent scales, and superintend their correct carrying out.

Against objects moving towards, or away from the battery, the range is found as above, but the length of the zone in which the shells fall is reduced to only 100 mètres, or even 200, and then firing is carried on until one round is observed beyond (advancing object), or in rear of (retiring object) the body of troops aimed at. The range is then reduced (increased) by 200 mètres, and firing carried on as before.

With shrapnel, without previous rounds of common shell, the range is found in a similar manner. Shrapnel should be burst 50 mètres short, and 3 to 4 mètres above plane at medium (1,000 to 2,000 mètres) ranges, 6 mètres above plane at longer ranges. Once the length of fuze has been determined by the battery commander, no changes are allowed by the subalterns.

No mention of range-finders is made in the Field Artillery Exercises.

When an action is expected, the wagons of a battery, which usually march with it, are divided into two lines. The first, consisting of at least three ammunition wagons and No. 1 store wagon under an officer or under-officer, follows close in rear of the battery. The remaining wagons, under the quartermaster-sergeant, are placed as detailed under "Marches" (see page 184). In action, the first line of wagons is brought up to 50 to 100 paces in rear of, and to a flank of, the battery, and follows its movements. If several batteries are working together, the first line may have to be in rear of the battery, but at all events it must keep up close connection with it. Ammunition is replaced at the latest when half the rounds in the limber-boxes have been expended. Two wagons are then sent up, which reverse and halt ten paces from the heads of the horses of Nos. 2 and 5 teams. The expended ammunition is then replaced, and the wagons at once return to the second line, and are replaced in the first by full wagons. Losses in men, horses, and material in the battery, are also replaced from the first line.

The second line of wagons is brought up to 1,000 paces from the battery. They may be massed by *Abtheilungen* (and commanded by a selected energetic officer), and in this case their position is reported to the *Abtheilung* commander, and to the batteries. The replacement of ammunition is, however, a matter for the battery commander. Casualties in men, horses, and material in the first line are made good from the second, which, in its turn, completes itself from the ammunition

columns. After an action, the second lines rejoin their batteries as soon as possible. Carriages belonging to other arms are never allowed to be attached to lines of battery wagons.

MARCHES.

The usual marching formation of the German dismounted troops is a column of sections of four men specially told off, the rear rank of each being allowed to take increased distance. Sections with a larger front are only formed when it is certain that no defiles necessitating a diminution of front are to be met with. Cavalry usually employ column of threes, and artillery column of route. The distances on a march are as follows:—

In rear of a company, 8 mètres.

" " battalion, squadron, battery, or column,
16 mètres.

In rear of a regiment, or *Abtheilung* of artillery, 30 mètres.

" " brigade, 60 mètres.

" " division, 250 mètres.

The depths of the columns of march of various units are given as follows in round figures:—

	Mètres.
Battalion with light baggage	400
" " with all baggage	500
Squadron	150
Field battery with first line of wagons	270
" " with first and second lines of wagons	460
Horse battery with first line of wagons	270
" " with first and second lines of wagons	490
Pioneer company	110
Divisional bridge train	310
Bearer company	220

To which may be added:—

Regiment of infantry with light baggage	1230
" " " with all baggage	1530
" " of cavalry	625
Field <i>Abtheilung</i> of 3 batteries with first line of wagons	560
Brigade of infantry with light baggage	2500

An infantry division, complete with its first line baggage, occupies about 5 miles of road, and with its second line baggage about $7\frac{1}{2}$ miles. Including its trains (1 artillery and 1 infantry ammunition column, 1 provision column, 1 wagon-park column, and 2 field hospitals), it occupies 12 miles of road. An army corps with first line baggage occupies 14, with first and second lines, 19 miles, with its columns and trains complete, 32 miles of road.

On the march, under favourable circumstances, a large mixed body of troops traverses a kilomètre ($\frac{3}{4}$ mile) in 12 minutes.

On the march, a short halt is made soon after starting, and after more than half of the march is over, a long halt is recommended. After this a shorter halt is made every two hours. No hard and fast rules are laid down, but officers commanding are left to act according to the heat, the length of the march,

&c. A start should never be made by infantry before daybreak, nor by mounted troops till one hour after daybreak. Troops are never allowed to retrace their steps from their quarters to a rendezvous, but must join in the column as it passes them.

Below is given a précis of the instructions for the formation, &c., of advanced and rear guards taken from the "*Felddienst-Ordnung*," and here as a specimen may be given an order of march of an army corps, given as a type by Cardinal von Widdern, in the case of a force advancing and expecting an action :—

ORDER OF MARCH OF THE THIRD ARMY CORPS.

Advanced Guard, Lieutenant-General X Commanding 5th Infantry Division.

5th Infantry Division	{	2nd Dragoons. 8th Grenadiers. 1st, 2nd, and 3rd Batteries 18th Field Artillery. 48th Infantry Regiment. 1st Pioneer Company (? divisional bridge train). 1st Bearer Company. Battalion ammunition wagons of the 9th Brigade. 2nd Line of wagons of the 1st, 2nd, and 3rd Batteries 18th Field Artillery.
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Main body:—

5th Infantry Division	{	3rd Rifle Battalion. 4th Battery 18th Field Artillery. 10th Infantry Brigade. Battalion ammunition wagons of the 10th Brigade. 2nd Pioneer Company. 2nd Line of wagons of the 4th Battery 18th Field Artillery.
Corps Artillery	{	Corps Artillery (3rd Field Artillery Regiment, except two horse batteries). 3rd Bearer Company.
6th Infantry Division	{	3rd Hussars (or the regiment may be with a flanking detachment or in the advanced guard). 11th Infantry Brigade. Battalion ammunition wagons of the 11th Brigade. 2nd <i>Abtheilung</i> 18th Field Artillery. 12th Infantry Brigade. 3rd Pioneer Company and Divisional Bridge Train. 2nd Bearer Company. 2nd Line of wagons of the 2nd <i>Abtheilung</i> 18th Field Artillery.

Baggage is divided into "light baggage" and "heavy baggage" as follows :—

		Light Baggage.	Heavy Baggage.
Staff of infantry regiment..	5 led horses		1 baggage wagon.
			1 provision wagon.
Battalion of infantry ..	7 led horses		1 baggage wagon.
	1 medical wagon		4 company baggage wagons.
	4 ammunition wagons		4 provision wagons.
Regiment of cavalry ..	58 led horses		1 baggage wagon.
	1 medical wagon		4 squadron baggage wagons.
			4 provision wagons.
			5 forage wagons.
Regiment of artillery ..	5 led horses		1 baggage wagon.
Staff of <i>Abtheilung</i> ..	4 led horses		1 baggage wagon.
Field battery ..	6 led horses		2nd line of wagons.
	1st line of wagons		1 provision wagon.
Pioneer company ..	1 led horse		1 baggage wagon.
	1 tool wagon		1 provision wagon.
	1 powder, &c., wagon		

* Dated 1881. Much has been changed in organisation, &c., since then, as will be apparent on an inspection of the "order of march."

Light baggage always follows the unit to which it belongs immediately on the march. Each battery is immediately followed by 3 or 4 ammunition wagons and 1 store wagon, forming its first line of wagons. The second lines of battery ammunition wagons (4 or 5 ammunition and 3 other wagons) are usually massed by *Abtheilungen* immediately in rear of the advanced guard, or of the division to which they belong.

The heavy baggage of all troops is massed by divisions or corps, in the same order in which the troops themselves march, and follows the column at a distance of about a mile, under the orders of a cavalry officer with a small escort.

The trains and ammunition columns of an army corps are divided each into two lines. The first line of ammunition columns follows the corps at half-a-day's march, but, if a fight is expected, it may be brought forward to the head of the heavy baggage. The second line generally marches with the second line of trains.

The first line of trains comprises a certain number of provision and wagon park columns, some field hospitals, and perhaps also the corps bridge train. It marches in rear of the first line of ammunition columns. The remainder of the trains form the second line and remain a day's march in rear of the corps.

ADVANCED AND REAR GUARDS.

Even though cavalry divisions are pushed well to the front, the army corps following them invariably push forward advanced guards to serve as a support for the cavalry. A body of troops, marching without cavalry in its front, invariably forms for itself an advanced guard, the composition of which varies with the ground, the strength of the force, and the distance of the enemy. As a rule it comprises from one-sixth to one-third of the infantry, and the whole of the cavalry, except when the country is unfitted for the latter. Artillery and pioneers, with, if necessary, a bridging-train and a part of a bearer company, are added as required. The distance between the advanced guard and the main body varies with circumstances, but must be great enough to prevent the march of the latter being checked, and at the same time not so great as to prevent the advanced guard being properly supported in time.

The advanced guard is divided into the main body (*Haupttrupp*), the vanguard (*Vortrupp*), and the cavalry of the advanced guard (*Avantgarden-Kavallerie*). The main body comprises the whole of the artillery, and about two-thirds to three-fourths of the infantry, with any special troops there may be with the advanced guard. The vanguard is pushed forward so far as is necessary to give time for the main body to deploy for action, usually one-half to one kilomètre in the case of the advanced guard of a large body of troops. It comprises about one-fourth to one-third of the infantry, tactical units being kept as

far as possible intact, and a few cavalry. A strong vanguard throws forward a company or section 300 to 400 metres ahead, and this again a squad, under an officer, as point. Ahead of the latter is a cavalry point, consisting of 1 officer and 4 to 6 troopers, which at night or in thick weather may be replaced by the section of infantry, which moves in extended order. The cavalry of the advanced guard is pushed as far forward as possible, and in their turn form a main body, vanguard, and point, with flank patrols, but they are bound down to no forms. They must never lose touch with the vanguard of the infantry, and its commander is informed of the contents of all reports sent in to the commander of the whole advanced guard. Infantry or cavalry marching without the other arms make similar dispositions, and the main principle to be borne in mind is that the constant and steady advance of the main body of the force should never be checked without cause. If it is desired to cover a wider front than that observed by the advanced guard on one road, flank detachments are sent out from the main body of the advanced guard, and those in their turn act as does the vanguard of the latter. If a flank march has to be made, the troops up to that time forming the advanced guard become a flank detachment to cover the movement, and a new advanced guard is thrown out from the main body.

Rear guards, having no chance of support from a force in retreat, are made much stronger proportionately than advanced guards, especially in artillery. Their distance from the main body is also greater to allow for stoppages. A rear guard is distributed in the same manner as an advanced guard reversed.

OUTPOSTS.

When a body of troops on the march halts for the night, as a rule the outposts are at once taken over by its advanced guard, the advanced guard cavalry returning to the main body of the advanced guard as soon as their presence in front is no longer required. The outposts are divided into the main body of the outposts (*Vorposten Gros*), the outpost companies (*Vorposten Kompagnien*), and the outpost cavalry (*Vorposten Kavallerie*). The main body of the outposts remains as a rule on the main road, in a position suitable for defence, and from it are pushed forward the outpost companies, which cover themselves, when there is no cavalry in their front, by piquets (*Feldwachen*), or independent under-officers' posts (*Selbstständige Unteroffizier-Posten*). In their turn the piquets secure themselves by double sentries (*Posten*) as may be required for the proper observation of the ground. By day the outpost cavalry covers the entire front, the outpost companies acting as its supports, and by night that portion of it which can be spared returns to the main body of the outposts. Artillery is only added to the outposts in quite exceptional cases, and it always

returns to the main body of the outposts at night. Mounted orderlies are attached to all the units, 4 to 6 to the main body and to each outpost company, out of which latter 2 are attached to each piquet.

The whole of the outposts are under a commander of the outposts (*Vorposten-Kommandeur*), whose usual place is with the main body of the outposts. He receives his orders from the commander of the advanced guard, and issues them for the outposts. If the state of readiness for action, the extent of the line, or the ground require it, the line may be divided into sectors, each under a special commander.

The general situation and the proximity of the enemy determine the degree of readiness required of the main body of the outposts. Infantry men take off their equipment if it is of the 1887 pattern, and the Commander of the outposts determines whether his main body must all remain close to their arms, whether the whole may cook and feed horses at one time, and whether the horses may be unsaddled a few at a time or only have their saddles changed. Except the alarm, no bugle or trumpet calls are permitted.

The number of outpost companies and their position are determined by the ground and the lie of the roads, and one, posted near a road leading to the front, will be the minimum for each sector. The men of an outpost company take their equipment off, and part of them remain in constant readiness close to their arms and knapsacks. Orderlies attached are not allowed to unsaddle, and may only water and feed one by one. A double sentry is posted over the arms of an outpost company, and one is also pushed to the front for the immediate safety of the company. Before the cavalry are withdrawn for the night the piquets are sent out. The piquets and independent under-officers' posts of each company are numbered from right to left.

The piquets are usually composed of complete units, such as a section or a half-section. They furnish a line of double sentries, but more weight is laid on all the approaches (roads, paths, &c.) being watched by these and the intervening ground being patrolled, than on the line of sentries being able to see all the ground to their front. The number of double sentries is determined by the commander of the piquet. In isolated positions, or as examining guards at points where passage of the line is permitted, under-officers' posts of 1 under-officer (or lance-corporal) and 6 men, furnishing 3 reliefs, are posted. Double sentries should not be more than 440 yards (400 mètres) from the piquet. In placing sentries, all three reliefs are at first posted together, so that the men of the 2nd and 3rd reliefs may know the way to their post. On the lie of the ground and their duties having been explained to them, the 2nd and 3rd reliefs return to their piquet. Double sentries and under officers' posts are numbered from right to left in each piquet. Infantry men may take off the braces, knapsack, and

rear pouch, but keep the belt, two front pouches, haversack, water-bottle, and entrenching tool always on. The sentries are relieved every two hours, except in great cold or when the men have suffered great fatigue, and frequently they are allowed to smoke. Persons who are not distinctly recognised as belonging to the army are only allowed to pass at the examining guards. The German challenge is "*Halt! wer da?*" and by night any person not answering on a second challenge is at once shot down.

Patrols are extensively used by night. Under all circumstances, cavalry patrols are pushed to the front by night, and these are seconded in their duties by patrols of infantry composed of two men under a selected leader, which, however, cannot venture so far as the mounted men. Visiting patrols, which pass along the line of sentries, are only two men strong.

If a relief of the piquets is necessary, it usually takes place just before daybreak.

Cavalry outposts alone are employed usually by day, and are distributed in much the same manner as those of the infantry, *i.e.*, into supports (*Kavallerie Piquets*), which push forward piquets of one officer and a *Zug*, these in their turn throwing out independent under-officers' posts of 1 under-officer and 3 or more men, or vedettes, or both. Preference seems to be given to the under-officers' posts in the regulations, and these as a rule are dismounted and have only one dismounted sentry on the look out, thus sparing the horses. Patrols are not sent out by these posts, but the ground up to the enemy's outposts must be constantly and carefully searched by patrols from the piquets or supports. Vedettes may consist of two or three men. In the former case both men remain mounted, in the latter, two dismount and remain on the look out and one holds their horses.

Cavalry divisions, unsupported by infantry, are allowed wide latitude as to their outpost arrangements, which are usually dictated by circumstances, but in general they conform as far as possible to the above rules.

In fortress warfare, the system of outposts is the same, except that an uninterrupted line of double sentries is thrown out, that the various echelons are closer to one another, and that special measures are taken for improving communications, &c. Special positions are prepared in which the outposts defend themselves in one or other of their echelons. The whole line of investment is divided into sectors, to which troops are told off, and one-third of the infantry of each is always employed on outpost duty. These are relieved every few days, the outpost companies being relieved every 24 hours. The main body of the outposts and the outpost companies are generally placed in buildings prepared as quarters, and put in a state of defence. A parole is sometimes used, but not invariably. Troops going on outpost duty in a siege may leave their helmets and knapsacks in their permanent quarters, taking extra supplies of food and ammunition with them instead.

RAILWAY TRANSPORT.*

When troops are to be conveyed by rail, arrangements must be so made that infantry can be entrained within one hour, cavalry and field artillery within two hours, and train and columns within three hours of the time named for departure. When horses or baggage &c., are to be embarked, the men pile arms and take off their knapsacks and equipment, a guard being left over the latter which also furnishes sentries to keep order in the station. On the termination of the work the men are formed up two deep in front of their carriages, under-officers and lance-corporals being distributed to the various compartments, and are then told off to their compartments. On the bugle sounding, the men enter their carriages. Nobody is allowed to get out of a carriage at any halt until "march" is sounded, and then only on the platform side. When a halt is made for any time, sentries are always placed on the drinking fountains, ways out, restaurant, station office, &c. One man is left on duty for every two wagons with horses. All troops are practised every year in entraining and detraining carriages, horses, &c., except in the years in which they use the railways for the purpose of concentration for the manoeuvres or for transport to the artillery practice ranges.

For the transport of troops on the war footing by rail, the trains are calculated by "axles," the load for one "axle" being 12 officers, or 16 men,† or 3 horses with 1 man, or one light carriage or half a heavy carriage. The maximum number of "axles" in any military train is 110, but 100 is preferable. The following table‡ shows the minimum number of "axles" for troop trains, allowing that a two-axled 3rd class carriage can hold 40 men, and that officers' horses are carried 6 in a wagon, and troop horses 8 in a wagon.

Unit.	Number of Axles.					
	1st and 2nd class.	3rd class (40 men).	Wagons for 6 horses.	Wagons for 8 horses.	Platform wagons.	Total.
Corps headquarters... ..	4	8	40	36	40	128
Divisional headquarters	2	4	18	8	20	52
Brigade headquarters	2	—	4	2	2	10
Battalion of infantry	2	52	8	6	12	78
Squadron of cavalry	2	6	6	40	2	56
Field battery... ..	2	6	4	36	24	72
Horse battery	2	6	6	54	24	92
Infantry ammunition column	2	6	2	44	32	86
Artillery ammunition column	2	6	2	46	34	90
Pioneer company	2	10	4	4	8	28
Pioneer company, with divisional bridge train	2	12	4	24	34	76
Corps bridge train	2	6	4	54	66	132
Field bakery... ..	2	6	2	4	4	18
Provision column	2	4	2	42	34	84
Wagon park column	2	4	2	50	162	230
Bearer Company	2	12	6	8	14	42
Field hospital	2	2	4	6	12	26
Horse depot	2	4	2	50	2	60

* See also Chapter XXII. Part I.

† The usual practice is eight in a compartment.

‡ This table refers to a period previous to the introduction of the new regimental transport, but is still approximately correct.

The new field service regulations lay down that in one train there can be conveyed:—

- 1 Infantry battalion with regimental or brigade staff.
- 1 Rifle battalion.
- 1 Squadron with regimental and brigade staffs.
- 1½ Squadrons.
- 1 Field battery with regimental or *Abtheilung* staff.
- Five-sixths of a horse battery.
- 1½ Pioneer companies with a divisional bridge train.

The total number of trains required for an army corps may therefore be taken as follows:—

	Trains.
Headquarters and details.	2
2 Divisional headquarters and field bakery	2
25 Battalions of infantry (with brigade and regimental staffs)	25
2 Cavalry regiments (8 squadrons)	6
12 Batteries divisional artillery	12
3 Batteries corps artillery	3
2 Batteries corps horse artillery	2½
2 Divisional bridge trains with 3 pioneer companies	2
3 Sanitary detachments	1½
4 Infantry and 6 artillery ammunition columns	10
5 Provision columns.	5
1 Corps bridge train.	2
1 Horse dépôt	1
12 Field hospitals	4
5 Wagon park columns	15
4 Trains with supplies for first needs	4
Total	97

QUARTERS IN THE FIELD AND BIVOUACS.

In the German army the principle is recognised that the worst quarter is preferable to the best bivouac, and, accordingly, on service, whenever possible, troops are placed in quarters. Bivouacs are only used when troops are required to be ready for instant action, as on outpost duty, and immediately before or after an action, when large masses are held concentrated, or when no quarters are available. Tents are never carried. Two classes of quarters are recognised: ordinary billets (*Ortsunterkunft*), and close quarters (*Ortsbivouak*).

Ordinary billets are only used when the enemy is distant, when, to spare the country and to give greater comfort to the troops, they may be scattered to some distance on both sides of the line of march. The mounted arms are frequently mixed with the infantry so as to utilise both the stabling and lodging accommodation, and the ordinary peace process of issuing

billets is carried out, a billeting party (*Quartiermacher*) being sent on a-head. This is the method usually employed in peace manœuvres. If no time is available, quarters of the town, &c., are told off to the various units, which then distribute their own men. In each town, &c., so occupied, piquets are placed on the side next the enemy, and special guards are placed in the interior. Alarm-places are told off for each unit.

Close quarters simply consist in packing every building with as many men or horses as it will hold, the remainder, for whom there is no room, bivouacking in the gardens or in the immediate vicinity of the locality, but never in the streets. Such are used when large bodies of troops are doing long marches, and when, consequently, it is not desired to over-fatigue the men by sending them to a distance from the road, or in immediate contact with the enemy.

Bivouacs are regulated by much the same rules as are in force in the British army, and the principles of sub-dividing the bivouac into groups according to the order of battle, and of bivouacking in one line only are strongly insisted on. Shelters are constructed as far as possible. Piquets are thrown out towards the enemy as in ordinary billets, and battalions, &c., on the flank take corresponding measures on their exposed flank. In addition, in each bivouac a guard is placed over the colour or standard, or over the guns, which is responsible for the interior police of the bivouac. The above are, of course in addition to the ordinary outposts.

Infantry bivouacs in line of company columns (see Plate IX). On reaching the ground, a battalion takes this formation, arms are piled, and the belts, sword-bayonets, and helmets are hung on them. The companies next move to the rear to their bivouac places, and lay down their knapsacks and great coats by ranks. They then proceed to the construction of cooking places, latrines, &c.

Cavalry bivouacs in line of squadron columns wheeled to a flank with half distances only. When this formation is assumed, the rear rank turns about and advances 20 paces, and each squadron extends from its centre until it occupies one and a-half times its original front. The men then dismount, picket their horses, and lay down their helmets, belts, swords, lances, or cuirasses three paces in rear of the horses, the lances or swords stuck in the ground. If the order to unsaddle is given, the saddles (with the carbines remaining on them) are laid down in line with the swords, the blankets, ready folded for saddling up, being placed either on or below the saddles (see Plate X).

A battery bivouacs with its carriages in two lines, the guns and four other carriages in first line at fifteen paces interval, the remaining carriages in second line and covering, the wagons of the first line being in rear of the guns (see Plate XI). The horses are picketed in ten lines in rear of the carriages, the six sub-divisions, with the 1st line wagons

attached to each, each forming a line, and the second line of wagons forming four lines. A gangway five paces broad is left between the heads of every two lines of horses. Harness and arms are laid down three paces in rear of the horses, but, unlike the cavalry, special bivouac places are provided for the men.

Pioneers bivouac like infantry, ammunition columns and trains like artillery.

The interval between two battalions is ten mètres, that between two infantry or cavalry regiments or two batteries is twenty mètres.

CHAPTER XII.

OLD SOLDIERS' SOCIETIES (KRIEGER-VEREINE).

AN account of the German army would be incomplete without mention being made of the societies of old soldiers which have been formed all over the country. These societies date from the end of the Wars of Liberation, but were first placed upon their present basis in 1853, when their objects, generally speaking, were to bury former comrades with military honours, to develop sentiments of loyalty to the Sovereign, to aid indigent comrades, and to carry on military exercises, especially shooting. These societies, the principal of which was that of the "Young War Comrades," of Berlin, gradually degenerated into mere shooting clubs, till the war of 1864, and the foundation of the society of "Slesvigia" in Berlin, composed of men who had served through the campaign in Schleswig, brought them once more to public notice. The principles of the societies formed then were the same as those of 1853, except that the military exercises were left out, and the wars of 1866 and 1870 gave an immense impulse to the movement. Each society has its own code of rules, and one example, that of the *Krieger-Verein* of Munich, may serve as a type of all. The objects of this society are to nourish sentiments of loyalty, to keep up the feeling of military comradeship among the old soldiers, and develop military tastes in the rising generation, to have a religious service performed every year in memory of comrades fallen in battle, to hold conversaciones and military lectures, and to support old soldiers unable to earn their bread. There are four classes of members, viz.:—Ordinary members, who have served through one campaign; extraordinary members, who have belonged to or belong to the army; ordinary honorary members, officers, and officials who desire to belong to the society; and extraordinary honorary members, civilians who have distinguished

themselves in the auxiliary services. Each member is bound to attend the funeral of a deceased brother member, to attend the meetings of the society once a month, and to pay an entry of 7½d., and a quarterly subscription of 6d. The society has a regularly appointed president, secretary, treasurer, and committee of six members; and two half-yearly general meetings are held in each year to pass accounts, elect office bearers, &c. The committee disburses aid to indigent members, and has charge of the club rooms of the society, in which entertainments, &c., are given.

Krieger-Vereine are now established in almost every large village and town in Germany, even in the imperial territory of Alsace and Lorraine, and take part as corporate bodies at all public functions. Thus, at the unveiling of the statue of Germania in the Niederwald, more than 10,000 old soldiers attended, and at every grand parade before the Emperor the *Krieger-Vereine* may be seen marching in military order on to the ground, with their bands and colours, and taking up the place assigned to them as spectators. Recently a tendency towards centralisation has manifested itself, and, though the opposition has in places been great, a number of leagues have been formed, with central committees to protect the mutual interests of the societies, and keep them in harmony with one another. Government does much to encourage these societies, representing as they do a body of men carefully trained in principles of law and order, and, therefore, forming an important factor in the internal politics of the Empire. The advantage of having this more or less organised body of old soldiers would also be great in the event of the Landsturm being called out, and the transition from a society of veterans to a body of defenders of hearth and home is not great. In Bavaria, in fact, the delegates to the central committee are chosen by the district committees elected by all the societies in the corresponding landwehr battalion district. It is in this and in the maintenance of the military spirit that the peculiar value of the old soldiers' societies lies.

At the end of 1883, there were 36 leagues of *Krieger-Vereine*, counting in all 442,458 members, the largest of which were the German "Krieger Bund," with 130,350 members (1,695 societies), the Bavarian League with 80,000, the Saxon League with 81,205, the Westphalian League with 25,061, the Württemberg League with 30,962, and the Baden League with 15,608 members. In addition to these, the societies which had not entered into leagues numbered 226,414 members, giving a total of 668,872. It is probable that the numbers have since then increased, but no later statistics are available.*

* In 1886 the German "Krieger Bund" had 3,160 societies with 274,016 members.

CHAPTER XIII.

GRADUAL RISE AND DEVELOPMENT OF THE
GERMAN ARMY.

IN the following notes it is proposed to consider the development of the Prussian army only up to the year 1866, to sketch briefly the organisation of the other German contingents in that year, and then to enter into more detail as to the measures of organisation taken to bring the army of the German Empire up to its present strength. The account of the Prussian army up to the year 1806 is extracted, with only a few additions made, from the "Armed Strength of the German Empire," by Captain F. C. H. Clarke, R.A., D.A.Q.M.G., 1876.

The first germ of a standing army in Prussia dates from the era of the later Electors of Brandenburg, when a small guard of troops was permanently maintained, and some companies of mercenaries (*Landsknechte*) were distributed among the castles and fortified towns. In the event of war, arrangements to serve were made with this latter class, and with other trained bands, the highest bidder usually receiving their services. At the close of the war, they were again disbanded.

In the 17th century this state of things improved to some slight extent. In 1610, John Sigismund, the Elector, exercised his sovereign rights by embodying a small standing army during the momentous times of the Jülich-Clèves succession.

George William, the next Elector (1619-1640), had a small body of mercenaries in his pay during the first part of that campaign so disastrous to Germany—the Thirty Years War—but later on, and then mainly through the aid of Austria, he succeeded in furnishing a recruited army of 8,000 infantry and 2,900 cavalry for the war against Sweden. Even these troops were so independent of the country and of the provincial parliaments which they served, their oath of allegiance having been taken to the Emperor and not to the Elector, that they bore little resemblance to those national armies pervaded by sentiments of devotion to their country, which are now looked upon by continental nations as the only guarantee against foreign aggression. One great defect showed prominently in the armies of those times—the absence of a properly constituted body of officers.

The first sovereign who approached the subject of a standing army from the now accepted point of view was Frederick William, the Great Elector (1640-1688). Succeeding his father when the Thirty Years War was at its height, he managed on the conclusion of peace to regain all the territory which the weak character of his predecessor had nearly lost to his country. Finding himself threatened from the west by France, then the most formidable power in Europe, on the

north by the Swedes, and on the east by the menacing attitude of Poland, to which kingdom his duchy was under feudal subjection, he resolved, as the only means of securing his independence, to form a small but efficient standing army.

His first measure was to introduce voluntary enlistment amongst the subjects of the state. The military establishments were reduced on the termination of the war, but the troops were not disbanded, as had formerly been the case. The expense of the army was defrayed from supplies granted by the provincial parliaments (*Stände*), from an excise duty, and from exemption money paid by the nobility and burgesses. His corps of officers was more carefully selected from the noble and educated classes of the community. Schools of military education were instituted, of which the principal was the *Ritter Akademie* at Colberg (1653), where 60 to 70 young nobles received a military training for a period of two or three years before being transferred to the ranks as officers.*

In 1658 his army numbered about 30,000 men, and at his death in 1688 he bequeathed the following military force to his successor :—

Guard	..	..	..	..	..	6 battalions	3,600 men.
Infantry	..	..	..	..	..	30 "	18,000 "
Cuirassiers	..	..	..	..	..	32 squadrons	3,840 "
Dragoons	..	..	..	..	..	8 "	960 "
Garrison troops for fortresses	..	..	..	..	..	20 companies	3,000 "
Giving a total of							29,400 men.

To which must be added the artillery, engineers, train, &c., making a total force, in round numbers, of 32,000 men. Taking the population at a million and a half, the proportion withdrawn for military purposes would be about 2 per cent. The numerical increase to the army in the thirty years (1658–1688) had not been great, but its internal organisation, equipment, &c., showed a very marked improvement.

The excellence of the army which the Great Elector left to his son and successor Frederick proved so formidable an argument to the house of Hapsburg, at that time supreme in Germany, that the Emperor ultimately gave his assent to the formation of the duchy into a kingdom, and Frederick III was crowned first King of Prussia in 1701.

One of the first measures of Frederick was to lay the foundation of the present system of appointing officers. Cadet academies were established.

During the earlier years of his reign (1703) he instituted a land militia (*Miliz*), which, although from its inapplicability to

* The battalion was introduced as the tactical unit of infantry, and was formed of 4 companies, each of 150 men; 2 battalions constituted a regiment. The squadron (cuirassiers and dragoons) was the unit of cavalry, each consisting of 120 horses; 4 squadrons formed a regiment.

the times it only survived 10 years, was the prototype of the creation of the 19th century—the Landwehr.*

During the Spanish war of succession (1702–1713), the Prussian army was increased to 44,000 men; it rendered important service under Leopold of Dessau against the French General Villars in Bavaria, and shared in the battle of Blenheim. The army subsequently fought hand in hand with Eugene of Savoy at the siege of Turin; it served also at Ramilies, Oudenarde, and Malplaquet.

The strength of the army at the death of Frederick I, in 1713 was as follows:—

Infantry (including Guard)	..	..	38 battalions†	=	27,550 men.
Cavalry	..	..	32 squadrons	=	4,160 "
Dragoons	..	..	24 companies	=	1,944 "
Garrison troops	..	..	20	"	= 3,000 "
Officers, cadets, artillery, engineers, train, say					8,346 "
Total					40,000 "

Equivalent to about 2 per cent. of the population of 2 millions.

The reign of the next King of Prussia, Frederick William I (1713–1740), was one of peace; order and frugality, amounting almost to parsimony, which were characteristic of his rule, were applied also to the army, and the expenditure entailed on this head did not exceed that of his predecessors with half the number of men. Much was done for the internal improvement of the army. Crimping was abolished, and recruiting officers were stationed in non-Prussian territories.

In 1733, a regulation was issued with regard to the filling up of the cadres, which may be looked on as the commencement of the present district system. Each province was divided into recruiting districts, to which certain regiments were permanently assigned, and from which they drew their recruits. Conscription was introduced in each district, from which exemptions were allowed in the case of nobles, sons of officers, clergymen, government officials, and the wealthy classes generally. Hand in hand with this connection of regiments with territorial districts grew the institution of land regiments, which corresponded generally to the land militia of Frederick I. There were four of these regiments, of which only the cadres, officers, non-commissioned officers, buglers, &c., were permanently embodied; the men were called out for a fortnight's training in each year. In the event of war breaking out, they were employed in garrison duty.

* A very ancient mention of Landwehr occurs in Baluzii Capitularia, vol. ii, p. 44, quoted in "Hallam's Middle Ages," i, p. 262. 10th Edit. "Volumus," says Charles the Bold, "ut cujuscunque nostrum homo, incujuscunq, regno sit, cum seniore suo in hostem, vel aliis suis utilitatibus pergat; nisi talis regni invasio, quam *lantweri* dicunt (quod absit), acciderit ut omnis populus illius regni ad eam repellendam communiter pergat." This very ancient mention of the Landwehr, or insurrectional militia, so signally called forth in the present age, will strike the reader.

† Organised in 5 Companies of 145 men each.

According to the official report of General von Massow, the strength of the army at the death of Frederick William I in 1740 was 83,468 men, or 3·63 per cent. of the population of 2½ millions.

Infantry (including Guard)	..	..	82 regiments	=	66 battalions.
Cuirassiers	..	..	12	"	= 60 squadrons.
Dragoons	..	..	6	"	= 45 "
Hussars	..	..	2	"	= 9 "
Field Artillery	..	..	1 battalion	=	6 companies.
Garrison Artillery	..	..	1	"	= 4 "
Garrison troops	..	..	4	"	= 20 "
Land regiments	..	..	8	"	

From these figures it will be seen that Prussia could take the field with 66 battalions and 114 squadrons, exclusive of artillery, while 12 battalions would be left in the country as home garrisons.

The cost of maintaining this standing army of 83,000 men, as given in the estimates for 1739, was 4,933,732 thalers (740,060*l.*), out of a gross revenue of 7,400,000 thalers (1,110,000*l.*).

The changes in the formation, equipment, &c., of the army between 1713-1740 were confined chiefly to the infantry, which arm received almost the exclusive attention of the monarch. Cavalry was neglected, the horsemen were heavy and the horses ill-trained; too little attention was paid to the force of the charge, and too much to fighting on foot and the use of the fire-arm. The artillery received a more military character. It was organised in 10 companies, 4 garrison and 6 field; the guns were better served, but they suffered from want of mobility. The fortresses were armed with heavy ordnance.

By the regulation of 1726 each regiment of infantry had a fixed establishment of 2 battalions, each battalion consisting of 5 companies. The companies had a strength of 4 officers, 11 non-commissioned officers, 3 drummers, 1 carpenter, 1 barber surgeon, and 120 privates. The infantry were drawn up in 3 ranks.

In 1727 a regulation established the strength of each squadron at 6 officers, 12 non-commissioned officers, 2 trumpeters, 2 farriers, and 130 men.

When Frederick II., better known as "The Great" (1740-1786), came to the throne on the death of his father, he found, in addition to a full exchequer, an army, with the basis of a good organisation and drilled to a fault, which, under his directing genius, was rapidly transformed into the most formidable force in Europe.

The death of the Emperor Charles VI. without male issue induced Frederick to prefer his claim to the Silesian principalities, which had at one time belonged to the House of Hohenzollern. The enforcement of these pretensions led to a series of wars, from which the Prussian Monarchy emerged as one of the Great European Powers.

The result of the "First Silesian War" was to place nearly

the whole of Silesia in Frederick's hands. Although not so uniformly successful in the "Second Silesian War," brought about by his endeavours, in concert with France, to place the Elector of Bavaria* on the imperial throne, the superiority of his army to those of the time was very marked. Silesia still remained to him at the Peace of Dresden in 1745.

The menacing attitude of a formidable coalition composed of Austria, Russia, Saxony, France, and Sweden, which had for its object the partition of Prussia, led Frederick in 1756 to seek the alliance of Great Britain. During part of the Seven Years' War which followed, this latter power provided large subsidies in men and money, until the alliance was broken off in 1761 on the retirement of Mr. Pitt from office.

At the outbreak of the "Seven Years' War," Frederick had to recruit largely; he raised his battalions to a strength of 810 men. The war was a series of alternate triumphs and reverses to the Prussian arms. It cost her many men and reduced the finances of the country to the lowest ebb; it was equally disastrous to her antagonists. Nothing but the great military genius of the king, the excellence of his generals, and the dissensions of the coalition saved the kingdom from being blotted out of the map of Europe. The peace of Hubertsburg in 1763 found Frederick still in possession of Silesia.

The army which Frederick left at his death in 1786 consisted of:—

Infantry	110 battalions	= 120,000
Cavalry	273 squadrons	= 40,000
Field and Horse Artillery	40 companies	} = 10,000
Garrison Artillery	13 "	
Miners	4 "	
Pontoons	1 company	
Garrison infantry	48 battalions	} = 30,000
Land regiments	25 companies	

Total = 200,000 men.

Or about 3·5 per cent. of a population of 5,659,000 souls. Many of the men were on furlough during peace. The cost of this army amounted to 13 millions (1,950,000*l.*), the gross revenue of the country being 18 to 21 millions of thalers.

The strength of the army at the death of Frederick William II. (1786–1797) was as follows:—

Infantry (including Guards)	199 battalions.
Cavalry	233 squadrons.
Field and Horse Artillery, 10 battalions	50 companies.
Garrison Artillery	15 "
Miners	4 "
Pontoons	2 "
Depôt and garrison troops	56 battalions.
Land regiments	25 companies.

* Francis of Lorraine, husband of Maria Theresa, daughter of the deceased Emperor, was the other claimant to the throne.

These formed a force of 182,000 infantry, 41,000 cavalry, and 12,000 artillery, &c., giving a total force of 235,600 men. This figure shews a withdrawal from the population (8,687,549 souls) of 2·7 per cent. for military purposes. The cost of the army in 1797 was 17 millions of thalers (2,550,000*l.*) out of a gross revenue of 30 millions (4,500,000*l.*).

Towards the latter end of the reign of this monarch a "chief military commission" was formed. One of the measures recommended was the division of the army into 4 army corps, the North Prussian, South Prussian, Silesian, and Reserve Corps, the latter comprising the troops of Magdeburg, Westphalia, &c. This was proposed so as to increase the preparedness of the army for a war against Russia, but the death of the King put a stop to the project.

The reign of the next sovereign, Frederick William III. (1797-1840), was marked by the creation of an instrument which was destined in after years to raise the Kingdom of Prussia into the first rank of European monarchies—a national army.

In 1803 the Commission on Military Organisation received the royal commands to devote its attention to a scheme for organising, on a definite basis, the land reserve forces, and more especially to consider certain projects of army reform submitted by Major v. d. Knessebeck and General v. Courbière, which advocated a system almost identical with that of the present Landwehr and Landsturm. These proposed reforms met with some opposition at first, and although their essential feature—the principal of a land militia—was accepted, the collateral questions, involving changes in the system of discipline and punishments, the intellectual improvement of the soldier, &c., met with very great opposition. The Commission recommended in 1804 the formation of 78 national battalions, to be recruited from old soldiers and men exempted from serving in the standing army, but the outbreak of war in 1806 prevented this measure from being carried into effect.

The strength of the army in 1806—the year of disasters in which the glorious old regiments of Frederick the Great almost entirely disappeared—was as follows:—

Infantry.—1st Battalion of Guards	} forming the	} = 3
Regiment of Guards (2 battalions)		
Guard Grenadier Battalion, No. 6.	..	= 1
58 line regiments, No. 1 to 60, each of 2 muskietier battalions of 5 companies and 1 of 4 companies, with 2 grenadier companies which formed 1 battalion for every two regiments	..	= 174
Total, Muskietier battalions	..	= 29
Grenadier battalions	..	= 29
1 Grenadier battalion formed from the grenadier companies of the guards	..	= 1
1 Feldjäger (Rifle) Regiment	..	= 2
24 Fusilier (light) battalions	..	= 24
Total battalions	..	= 234 = 194,336 men.

Cavalry. —Cuirassiers, 13 regiments of 5 squadrons ..		=	65	
Dragoons, 12 regiments of 5 squadrons ..		=	60	
2 regiments of 10 squadrons ..		=	20	
Hussars, 10 regiments of 10 squadrons ..		=	100	
2 battalions of 5 squadrons ..		=	10	
Total squadrons		=	255	= 41,102 men.
Artillery. —4 foot (field) regiments } 50 companies		=	15,678	men.
1 horse regiment				
15 garrison companies		=	2,550	men.
Pontooners, 2 companies }		=	586	men.
Miners, 2 companies				
Engineers and general staff		=	98	men.
Total		=	254,350	men.

With 600 field and 434 regimental guns.

The population of Prussia being 9,743,000, this number would give a percentage of 2.61 withdrawn for military purposes.

In the earlier battles of the war, Jena and Auerstadt, only 120,000 men were mobilised; the remainder, chiefly troops from East and South Prussia, formed the nucleus of the army in the second part of the campaign.

The disastrous peace of Tilsit deprived Prussia of all her territory westward of the Elbe, and annexed the Duchy of Warsaw to Saxony.

Prussia now undertook a complete reorganisation of her army. In 1807-8 a Commission was appointed including, amongst others, the well-known names of Scharnhorst, Gneisenau, Clausewitz, &c., who recommended that the army should be a national one, that the enlistment of foreigners should cease, and that the exemptions from service should be more restricted; further, that the army should be permanently divided into army corps and divisions, that the new formations already mentioned as projected before the war should be carried into effect, that the condition of the separate arms should be improved, and that regiments should be named after the provinces from which they recruited.

The carrying into effect of these proposals had, however, to be postponed in consequence of the binding terms of the Paris Convention (1808), which decreed that Prussia was for a term of ten years to maintain a standing army of only 42,000 men, composed of 6,000 guards, 22,000 infantry (10 regiments), 8,000 cavalry (8 regiments), and 6,000 artillery, engineers, &c. No levy of the militia was to take place during that period.

These conditions, except as regards the total number of men, were not, however, strictly adhered to. Out of the remains of the old infantry there were formed in November, 1807, out of the :—

Old Regiment.		New Regiment.
Regiment von Büchel No. 2 ..	..	1st East Prussian Infantry Regiment.
Regiment Prince Henry No. 11 ..	..	2nd East Prussian Infantry Regiment.
Regiment von Stutterheim No. 14..	..	3rd East Prussian Infantry Regiment.
Regiment von Diericke No. 16 ..	..	4th East Prussian Infantry Regiment.
Regiment von Hamberger No. 52 ..	..	1st West Prussian Infantry Regiment.
Regiment von Courbière No. 58 ...	..	2nd West Prussian Infantry Regiment.
Depôts and remnants .. ..	..	{ 1st Brandenburg Infantry Regiment (the Royal Regiment).
		{ 2nd Brandenburg Infantry Regiment.
Regiment von Nuits, No. 8 ..	..	1st Pomeranian Infantry Regiment.
New formations and depôts ..	..	{ 2nd Pomeranian (Colberg) Infantry Regiment.
		{ Silesian Infantry Battalion.

Each regiment had two musketer battalions of four companies, a light battalion (called fusilier battalion in 1809) of four companies,* a depôt company, and two grenadier companies (four in the Royal Regiment). In 1808, the Foot Guard Regiment of two grenadier battalions of four companies was formed from remnants of the old Guard Regiments, and in November of that year the 2nd Brandenburg Regiment was reduced, and two new ones, the 1st and 2nd Silesian, formed on the nucleus of the Silesian Battalion. In November of the same year the infantry regiments received consecutive numbers as follows :—

No. 1. 1st East Prussian.	No. 7. 2nd West Prussian.
2. 1st Pomeranian.	8. Foot Guard Regiment.
3. 2nd East Prussian.	9. Royal (<i>Leib</i>) Infantry Regiment.
4. 3rd do.	10. Colberg Infantry Regiment.
5. 4th do.	11. 1st Silesian.
6. 1st West Prussian.	12. 2nd Silesian.

In 1808 also the Guard Rifle and East Prussian Rifle Battalions and the Silesian Sharpshooter Battalion were formed from details and from volunteers.

The remains of the cavalry formed the following regiments in October, 1807 :—

Old Name.		New Name.
Wagenfeld Cuirassiers, No. 4 ..	..	Silesian Cuirassiers, No. 1.
1st Battalion Ziethen Dragoons, No. 6 ..	..	East Prussian Cuirassiers, No. 2.
Garde du Corps Regiment, No. 18 ..	..	Garde du Corps Regiment, No. 3.
"Marches" Cuirassier Brigade, formed from remnants and depôts		Brandenburg Cuirassiers, No. 4.
Queen's Dragoons, No. 5 .. ..	..	Queen's Dragoons, No. 1.
2nd Battalion Ziethen Dragoons, No. 6 ..	..	1st West Prussian Dragoons, No. 2.
Bucsko Dragoons, No. 7 .. ..	..	Lithuanian Dragoons, No. 3.
Esebeck Dragoons, No. 8 .. ..	..	2nd West Prussian Dragoons, No. 4.
Von Wedell's 1st and 2nd Dragoon Brigades, formed from remnants .. ..	..	{ Brandenburg Dragoons, No. 5. Neumark Dragoons, No. 6.

In 1808 the two old hussar regiments which had survived, and new "brigades" which had been formed during the war, were taken on the establishment as follows :—

* It is noteworthy that this organisation of the regiment has been maintained down to the present day.

Old Name.	New Name.
1st Battalion von Prittwitz Hussars, No. 5 ..	1st Royal Hussars.
2nd Battalion von Prittwitz Hussars, No. 5	2nd Royal Hussars.
Von Rudorff Hussars, No. 2, and Hussar Battalion Vila, No. 11	1st Brandenburg Hussars.
Von Schill's Cavalry	2nd Brandenburg Hussars.
Von Blücher's Hussar Brigade.. ..	Pomeranian Hussars.
1st Silesian Hussars	Upper Silesian Hussars.
2nd Silesian Hussars	Lower Silesian Hussars.

The "Towarczy" Corps (No. 9) of Hussars, armed with lances, and the independent battalion of the same, formed the 1st (West Prussian) and the 2nd (Silesian) Lancer Regiments. All these regiments had four squadrons.

As regards artillery, only the 4th Regiment remained in existence, and it, with some newly-raised companies, was formed in December, 1808, into three brigades, the Prussian, Brandenburg, and Silesian, each of 12 foot and 3 horse companies.

Thus at the end of 1808, the Prussian army consisted of:—

Infantry	44 battalions	=	26,400 men.
Cavalry	76 squadrons	=	9,500 "
Artillery (field and horse)	45 companies	=	6,174 "
Total ..			42,074 "

These, by a cabinet order of the King, 9th September, 1808, were divided into six brigades, each corresponding to a military district and named after the provinces of East and West Prussia, Pomerania, Brandenburg, Upper and Lower Silesia. The formation of the army at this period has been thus closely followed because it is of historical interest, as connecting the troops of the present day with the regiments of the Great King.

While thus conforming to the letter of the Paris Convention, in so far as only a definite force was maintained under arms at one time, successive batches of young men joined the standards, and, after being drilled and trained, were dismissed to their homes (the so-called "Krümper" system). In this way 20,000 men yearly, in addition to the 42,000 with the army, received a military training.

In 1809 many improvements were introduced. The field exercises of the infantry, cavalry, and artillery were adapted to the modifications in contemporary tactics, and instructions were issued for autumn manœuvres and for the handling of the larger units in battle. The whole question of military education was investigated, and a school for artillery and engineers, the war schools, and the Staff School (War Academy) were established. As regards the troops, a light battalion was added to the Foot Guard Regiment (No. 8), the Upper and Lower Silesian Hussars were united to form the 1st Silesian, and a new 2nd Silesian Hussar Regiment was raised. The 2nd Bran-

denburg Hussars became the 3rd Lancers, so that in 1809 the first six hussar regiments received their present numbers, viz. : 1st (1st Royal), 2nd (2nd Royal), 3rd (Brandenburg), 4th (1st Silesian), 5th (Pomeranian), 6th (2nd Silesian). A squadron of lancers, which in 1810 became the Guard Lancer Squadron, was also formed, and a horse and a field battery of the Brandenburg Brigade became guards.

The year 1811 saw the formation of a Guard Dragoon and a Guard Hussar Squadron, and of a Model Infantry Battalion, organized much on the lines of the present Instructional Battalion.

The year 1813 was marked by the organisation of the Landwehr, of which the germs had been seen in the land militia of Frederick I., the land regiments of Frederick William I. and Frederick the Great, and the free battalions of the seven years' war, as well as in the suggestions for the formation of land reserves by v. d. Kneesebeck, and in Scharnhorst's proposals for forming a reserve army.

On the 17th March, 1813, a royal edict ("Orders for the Organisation of the Landwehr") was promulgated, by which the Landwehr and Landsturm were to include all men capable of bearing arms, between the ages of 18 and 45. The provinces of Kurmark, Neumark, Pomerania, East Prussia, West Prussia, and Silesia organized 38 regiments (153 battalions) of infantry, and 31 regiments (124 squadrons) of cavalry, giving a force of 100,000 foot and 9,000 horse.

In the first half of 1813, 12 reserve regiments of 3 battalions each were formed, one by each of the line regiments. The Foot Guard Regiment, No. 8, dropped its number, and the 9th to 12th took the numbers 8 to 11, a new 12th (2nd Brandenburg) Regiment being raised. The Garde du Corps Regiment also dropped its number, and the 4th Cuirassiers became the 3rd. At the outbreak of the war the Guard Dragoon, Lancer, and Hussar Squadrons with a newly-raised Guard Cossack Squadron formed the Light Cavalry Regiment of the Guard. The 2nd Foot Guard Regiment was formed out of the Model Infantry Battalion, the 1st Battalion Colberg Regiment, and the Fusilier Battalion of the Royal Regiment, which two latter battalions were replaced in their regiments by new formations. A reserve battalion was also formed for each guard regiment.

Thanks to those measures, on the outbreak of hostilities in 1813, Prussia, whose army the Emperor Napoleon thought to have reduced to impotence, was able to place in the field 253,350 men (including Landwehr, volunteers, &c.). All exemptions from service were done away with, and every able-bodied man between 17 and 40 was placed in the ranks. The political idea of this arming of the nation was well expressed by the concluding words of the King's address "To my people" of the 17th March, 1813:—"It is the last decisive struggle that we are about to enter upon for our existence, our independence, our well-being; there is no other issue from it but an honourable peace or a glorious downfall."

In 1814 the guard reserve battalions were broken up, the six Grenadier battalions of the line were formed into two Grenadier regiments, the Kaiser Alexander and the Kaiser Franz, and the Guard Sharpshooter Battalion was formed.

After the peace of Vienna, Prussia again acquired considerable political importance, quite out of proportion to the extent of her territory and population (10 millions). At that time the great Powers maintained armies varying from 400,000 to 500,000 men, of which one-third to one-fourth were on furlough. Prussia, in order to keep pace with the times, founded her system on the principle of general obligatory service and small cadres, which were to serve as training schools for the nation, and were to be raised to a war footing by calling up the men on furlough. These two principles lay at the foundation of the Law of 1814 with regard to military service, and the Law of November, 1815, with regard to the Landwehr.

By a cabinet order of the 3rd September, 1814, a new law upon the liability to military service was promulgated, which enacted that every man was liable from the commencement of his 20th year. The armed forces were to consist of the standing army, the first and second Bans of the Landwehr, and the Landsturm. The standing army was to be composed of men between the ages of 20 and 25, three years being passed with the colours and two years with the reserve. After completion of the reserve service, the men were to pass to the first Ban (*Aufgebot*) of the Landwehr for 7 years (26 to 32), and to the second Ban for another period of 7 years (33 to 39); lastly, the Landsturm was to consist of all men capable of bearing arms between the ages of 17 and 49.

Early in 1815 a considerable increase was made to the standing army. The 12 "Reserve Infantry Regiments" became the 13th to 24th of the line, and 8 more, the 25th to 32nd, were either newly formed or taken over from other States. Of cavalry, the 4th Cuirassiers (Magdeburg), 7th (Rhenish) and 8th (Magdeburg) Dragoons, 7th to 12th Hussars, and 4th to 8th Lancers were raised or taken into Prussian service. The Guard Dragoon and Hussar Squadrons were raised to full regiments, and the Guard Cossack and Lancer Squadrons with two Silesian landwehr squadrons formed the Guard Lancer Regiment. The Magdeburg rifle and Rhenish sharpshooter battalions were also raised.

On the outbreak of the war in 1815, Prussia placed four army corps, comprising 116,897 men and 312 guns, in Belgium, and two more corps and a guard and grenadier corps were formed in Prussia, but arrived too late to take part in the short campaign.

On peace being restored, the territorial organization of the army was carried out in its entirety. One army corps of guards and grenadiers and eight of the line were formed. The latter were assigned to provinces as follows:—1st East Prussia, 2nd Pomerania, 3rd Brandenburg, 4th Prussian Saxony, 5th Posen

and West Prussia, 6th Silesia, 7th Westphalia, 8th Rhineland. Each army corps had two divisions of two infantry brigades and one cavalry division of two brigades. Each infantry brigade had a regiment of the line and a regiment of Landwehr of the 1st Ban, small cadres only being maintained in peace for the latter. The cavalry division consisted of two brigades of two regiments of four squadrons each. Each corps had also four Landwehr cavalry regiments, an artillery brigade, a division of rifles, a division of pioneers, &c. Regiments were permanently garrisoned, and drew their recruits from the district surrounding their station. Reserve regiments, which acted as garrison troops in war, and which had corresponding reserve Landwehr battalions, were formed in each corps. The regular army and the Landwehr of the 1st Ban formed the field troops in war, the *dépôt* troops were formed of the recruits and part of the reserves, while the surplus gave the cadres for the Landwehr of the 2nd Ban, which constituted the local troops. This reorganisation was not fully completed till the year 1830, when, on the 21st March, the plan of mobilisation of the army was published.

The detail of changes during those years is as follows: In 1816 the artillery was reformed into 1 guard and 8 line brigades, each of 12 foot and 3 horse companies in 3 *Abtheilungen*, the pioneers were formed into 1 guard and 8 line *Abtheilungen* of 2 companies each, and 2 (the 33rd and 34th) reserve regiments of infantry were formed. In the same year the 2nd Dragoons became Westphalian, and the 4th East Prussian, and were transferred to the corps recruited in those provinces. In 1817 the 35th and 36th Reserve regiments were formed. In 1819 the 1st, 2nd, 4th, and 8th Dragoons became the 2nd, 4th, 5th, and 8th Cuirassiers respectively, the 1st to 4th Cuirassiers taking the numbers 1, 3, 6, and 7. The 3rd, 5th, 6th, and 7th Dragoons took the numbers 1 to 4 respectively. Four permanent Guard Landwehr squadrons were formed. In 1820, the 33rd to 36th regiments were each split into two (33rd to 40th) and thus eight reserve regiments, each of two musketer battalions, were formed, one for each army corps. In the following year, a guard instructional Landwehr battalion was raised (which in 1826 was expanded into the Guard Reserve Regiment), the four Guard Landwehr squadrons were expanded into two Guard Landwehr cavalry regiments, the Guard Lancer Regiment became the Guard Cuirassier Regiment, and the two rifle and two sharpshooter battalions of the line were each divided into two *Abtheilungen* so as to give one such for each corps.

In 1830, therefore, the army was composed as follows:—

Infantry. —Guards and Grenadiers, 4 regiments				=	12 battalions.
Guard Rifles and Sharpshooters				=	2 „
Guard Reserve Regiment				=	2 „
Line infantry, 32 regiments				=	96 „
Line reserve infantry, 8 regiments.. ..				=	16 „
Line rifles and sharpshooters, 8 <i>Abtheilungen</i>				=	16 companies.
Total infantry				{	128 battalions. 16 companies.
Cavalry. —Guards, 4 regiments.. ..				=	16 squadrons.
Guard Landwehr, 2 regiments				=	8 „
Cuirassiers, 8 regiments				=	32 „
Dragoons, 4 regiments				=	16 „
Hussars, 12 regiments				=	48 „
Lancers, 8 „				=	32 „
Total cavalry				=	152 „
Artillery. —9 brigades (1 of the Guard)				=	27 horse companies. 108 foot companies.
Pioneers. —9 <i>Abtheilungen</i> (1 of the Guard)				=	18 companies.
Landwehr. —Guards Infantry, 4 regiments				=	12 battalions.
Line infantry, 32 regiments				=	96 „
Reserve landwehr, 4 regiments				=	16 „
Total infantry				=	124 „
Cavalry—32 regiments				=	128 squadrons.
Independent reserve squadrons				=	8 „
Total cavalry				=	136 „

The strength of the standing army was about 130,000 men, giving a per centage of 1·6 on a population of 11,200,000. The army budget for 1830 was 22,775,098 thalers (3,416,264*l.*) or 31·11 per cent. of the total expenditure.

During the long period of peace till 1859, this organisation remained undisturbed, only minor changes being made. In 1840 the total strength was increased to 135,000 men by an augmentation of effectives. In 1845 the four sharpshooter *Abtheilungen* became the 5th to 8th rifle *Abtheilungen*, and in 1848 all 8 *Abtheilungen* were raised to full battalions. In 1850 the artillery brigades were termed regiments, and in the following year the companies were designated batteries. In 1851 the two Guard Landwehr cavalry regiments were transformed into the 1st and 2nd Guard Lancers, and in the following year the Landwehr regiments received names and numbers corresponding to those of the regular cavalry regiments.

The defects of the law of 1814 showed themselves in course of time as follows :—

1. The yearly contingent of 40,000 men proved too small for the increasing population, and hence not all the young men passed through the ranks of the army.

2. The Landwehr of the 1st Ban did not prove very trustworthy in the field; on the mobilisation of the army they assembled tardily and unwillingly. These circumstances induced the late King in 1860 to submit a new Bill to the Chambers, the fundamental idea of which was to increase the yearly contingent to 60,000 men, and augment the active troops at the expense of the Landwehr.

In the early part of 1860 this new project of law, with which the name of the late war minister, v. Roon, is associated, was laid before the Prussian Parliament, where it met with so much opposition from the deputies that it was not until several years later that the Government were able to carry their point.

According to the new project, the armed force was to consist of the army, the navy, and the Landsturm. The army was divided into the standing army and Landwehr, the navy into the fleet and the Seewehr. The Landsturm included those who belonged neither to the army nor navy. The standing army and fleet were to be always ready for service, and were to form the training schools for war of the whole nation. Thus the standing army with its reserves was to form the field army, while the Landwehr was to be relegated to the second line.

The liability to service in the standing army and fleet was to commence on the 1st January of the year in which the individual completed his 20th year, and to last for seven years from the date of his joining, of which cavalry were to serve four years, the other arms three years with the colours, the remainder of the time being passed in the reserve. Service in the Landwehr or Seewehr was to last twelve years (5 in the first and 7 in the second Ban) but to cease in any case on the completion of the 39th year of age.

Although not legally sanctioned, the Government of the day did not hesitate to introduce the new order of things "provisionally," and it was not till the 9th November, 1867, that an Army Bill was passed legalising the altered terms of service. The Landwehr of the 2nd Ban was, however, abolished, and the total period of obligatory army service thus reduced to 12 years.

In 1859, in consequence of the above changes in organisation, each infantry regiment formed a "Landwehr Cadre Regiment" out of men detached from its ranks, &c., and on the 5th May, 1860, these received the names of "Combined Regiments" with the same number as their parent regiments, and brigaded with them. On the 1st July of the same year, these regiments were named 3rd and 4th Foot Guards, 3rd and 4th Guard Grenadiers (the Kaiser Alexander and Kaiser Franz Regiments being then also termed Guard Grenadiers), and 41st to 72nd Infantry Regiments. Third battalions were, in a similar manner, formed for the Guard and eight Line Reserve Regiments, which then received the name of Fusilier Regiments. The 1st to 12th Infantry Regiments received the name Grenadiers.

In the cavalry, the 2nd Guard Dragoons, 3rd Guard Lancers, 5th to 8th Dragoons, and 9th to 12th Lancers were newly formed by squadrons detached from other regiments.

The artillery regiments were again termed brigades, and organised each in a horse *Abtheilung* of three batteries (6 of 4 guns in war), three field *Abtheilungen* of four batteries, and two garrison *Abtheilungen* of four companies. In 1864, the brigades were split up into two regiments each; one of field and horse,

and one of garrison artillery, although the officers were still liable to be transferred to either branch.

The pioneer *Abtheilungen* were raised to battalions of four companies.

At the outbreak of the war of 1866, the Prussian Army consisted of:—

Infantry.—9 Guard regiments	=	27 battalions.
72 Line regiments	=	216 „
2 Guard Rifle (Sharpshooter) Battalions ..	=	2 „
8 Line rifle battalions	=	8 „
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Total	=	253 „
Cavalry.—8 Guard regiments	=	32 squadrons.
8 Cuirassier regiments	=	32 „
8 Dragoon regiments*	=	36 „
12 Hussar regiments†	=	52 „
13 Lancer regiments.. .. .	=	48 „
<hr/>		
Total	=	200 „
Artillery.—9 Field regiments	=	162 batteries
9 Garrison regiments	=	864 guns.
Engineers.—9 battalions.	=	18 battalions.
Train.—9 battalions.		

The strength of the 1st Ban of the Landwehr was the same as in 1830.

The numerical war strength of the army was:—

Regular Army.—Infantry	253,504
Cavalry	30,000
Artillery	35,100 with 864 guns.
Pioneers	9,018
Train	11,034
Non-combatants	18,000
Depôt troops	100,512 with 228 guns.
Officers	13,000
Landwehr, 1st Ban.—Infantry	118,900
Cavalry (actually formed)	11,400
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Total	600,468 with 1,092 guns.

Passing now to the minor states, we need only consider those whose armies continued to exist as such after the war. The establishments of these armies were:—

BAVARIA.

Infantry.—1 Guard regiment } each of 3 battalions of 6 com- 15 Line regiments } panies	= 50,768 men.	
8 Rifle battalions		
Cavalry.—3 Cuirassier regiments } each of 4 squadrons	= 7,620 men.	
6 Light Horse regiments }		
3 Lancer regiments		
Artillery.—1st and 2nd Regiments, each 5 field batteries (of 4 guns) and 7 foot batteries	=	40 guns.
3rd Regiment, 4 horse artillery batteries.. .. .	=	24 guns.
4th Regiment, 4 field batteries (of 8 guns) and 8 foot batteries	=	32 guns.
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Total artillery, 96 field guns and 22 foot batteries.		
Engineers.—1 regiment of 8 companies	=	1,380 men.

* 4 of 4 squadrons, 4 of 5 squadrons.

† 8 of 4 squadrons, 4 of 5 squadrons.

SAXONY.

Infantry.—16 battalions of 4 companies	}	= 19,752 men.
4 rifle battalions of 4 companies		
Cavalry.—1 Guard regiment	} of 5 squadrons	.. .. . = 3,217 men.
3 line regiments		
Artillery.—10 field batteries		= 56 guns.
2 horse batteries		= 12 guns.
Engineers.—1 engineer and 2 pioneer companies.		

WÜRTTEMBERG.

Infantry.—8 regiments of 2 battalions of 5 companies	}	= 15,314 men.
2 rifle battalions of 5 companies		
Cavalry.—4 regiments of 5 squadrons		= 3,271 men.
Artillery.—2 horse batteries of 8 guns		= 16 guns.
2 light field batteries of 8 guns		= 16 guns.
2 heavy field batteries of 6 guns		= 12 guns.
3 foot batteries.		
Engineers.—1 company		= 210 men.

BADEN.

Infantry.—5 regiments of 2 battalions	}	= 10,745 men.
2 fusilier battalions		
1 rifle battalion		
Cavalry.—3 dragoon regiments of 4 squadrons		= 2,130 men.
Artillery.—Field artillery regiment		= 38 guns.
Foot artillery battalion, 4 companies.		
Engineers.—1 pioneer company.		

HESSE-DARMSTADT.

Infantry.—4 regiments of 2 battalions	}	= 7,242 men.
1 rifle battalion		
Cavalry.—2 light horse regiments of 4 squadrons		= 1,296 men.
Artillery.—1 horse and 3 field batteries		= 24 guns.
Engineers.—1 pioneer company.		

The minor states had forces as follows :—

Mecklenburg-Schwerin	2 infantry regiments of 2 battalions.
	1 rifle battalion.
	1 dragoon regiment of 4 squadrons.
	2 field batteries.
Mecklenburg-Strelitz	1 infantry battalion.
	1 field battery.
Oldenburg	1 infantry regiment of 3 battalions.
	1 cavalry regiment of 4 squadrons.
	2 field batteries.
Brunswick	1 infantry regiment of 2 battalions.
	1 rifle battalion.
	1 hussar regiment of 3 squadrons.
	1 field battery.
Anhalt	1 infantry regiment of 2 battalions.
	1 <i>Abtheilung</i> of 2 rifle companies.
Saxe-Weimar	1 infantry regiment of 3 battalions.
Saxe-Coburg-Gotha	1 infantry regiment of 2 battalions.
Saxe-Meiningen	1 infantry battalion.
Saxe-Altenburg	1 infantry regiment of 2 battalions.
Reuss	1 infantry battalion.
Schwarzburg	1 infantry battalion.

The successes of 1866 added a population of 4,273,000 to that of Prussia, including the old states of Hanover, Hesse-

Cassel, Nassau, &c., and out of the newly annexed territory and the smaller federated states of the North German Confederation mentioned in the above list, the organisation of three new Army Corps, the 9th, 10th, and 11th, was proceeded with. The contingents not mentioned in the above list, were broken up, only those of Hesse-Cassel being in part retained, and the new Prussian regiments were formed out of companies, squadrons, and batteries detached from the old regiments, which at once formed new units to replace them. In this way were formed by Cabinet Order of October 30th, 1866, the sixteen regiments Nos. 73 to 88, and the 9th to 11th Rifle Battalions. These did not receive territorial names till the next year, nor were most of them for some years stationed in their own recruiting districts. Of the contingents of the minor states, the 1st Mecklenburg-Schwerin Regiment, and the Strelitz Battalion, became, in 1867, the 89th Regiment, the 2nd Mecklenburg-Schwerin (with a newly raised battalion) the 90th, the Oldenburg Regiment the 91st, the three Brunswick Battalions the 92nd,* the Anhalt troops the 93rd, the Saxe-Weimar Regiment the 94th, the Coburg-Gotha and Meiningen troops the 95th, and the Altenburg, Reuss, and Schwarzburg battalions were amalgamated to form the 96th Regiment. The Mecklenburg Rifle Battalion formed the 14th Rifle Battalion. By the conventions concluded with those states, the effectives of the units were raised to the same strengths as those of Prussia, and a large number of Prussian officers and non-commissioned officers were transferred into the new regiments, officers of those regiments being correspondingly transferred to old Prussian regiments. Many officers of the former Hanover, Cassel, and Nassau, &c., troops also accepted Prussian commissions.

In the cavalry, there were formed :—

The 9th to 16th Dragoons,
13th to 16th Hussars,
13th to 16th Lancers,

by Cabinet Order of 30th October, 1866, from squadrons detached from old Prussian regiments. Unlike the infantry, not all these were attached to the new corps, but six of the old eight Army Corps also received a new regiment. On the 1st April, 1867, all Prussian cavalry regiments formed a fifth squadron, the object being that one squadron should form a dépôt in war, while the other four took the field, thus hastening mobilisation. In 1867, the Mecklenburg Regiment was doubled, and on 1st January, 1868, the two were numbered 17th and 18th Dragoons (five squadrons each). The Oldenburg Cavalry had become the 19th Dragoons in 1867, and formed its fifth squadron in 1869. The Brunswick Hussars, raised to five squadrons, took the number 17 in 1867.

* The Brunswick troops served under a separate agreement. Their officers were nominated by their own Duke, and the old black uniform was retained.

In the artillery, in October, 1866, the 9th, 10th, and 11th Regiments were formed in the same manner as the infantry regiments, the Mecklenburg batteries being incorporated with the 9th, and the Oldenburg and Brunswick batteries with the 10th Regiment. Each of these regiments, like the others, had three field *Abtheilungen* of four batteries (two heavy and two light) and one of horse artillery of three batteries.

Three new *Abtheilungen* of fortress artillery, three pioneer battalions, and three train battalions each with the numbers 9, 10, and 11, were likewise formed in 1866 and 1867. The number of Landwehr battalions was increased to 216, and service in the Landwehr was reduced to five years, the second Ban being abolished.

Of the larger states, Saxony alone was included in the North German Confederation of 1867, of the army of which her troops were to form the 12th Corps. In 1867, accordingly, her troops were reorganised under the orders of her own War Ministry, and formed on the Prussian model. The sixteen battalions of line infantry were grouped two and two, and a third battalion formed for each group, which then formed the 1st to 8th Saxon Infantry Regiments, which took the numbers 100 to 107.* The four rifle battalions formed a fifth from among them, and were then split up into the Sharpshooter (Fusilier) Regiment, No. 108, and Rifle Battalions Nos. 12 and 13. The 1st and 2nd Saxon Lancers, Nos. 17 and 18, were formed at a strength of five squadrons each from men detailed by the four cavalry regiments. The 12th Field Artillery (14 field batteries in four *Abtheilungen* and 2 horse batteries), and the 12th Fortress Artillery Battalion were reorganised from the former existing batteries, and the pioneers were raised to a battalion, numbered the 12th. The 12th Train Battalion was also formed. The old green uniform, with blue trousers, was given up for the infantry, but the cavalry, artillery, engineers, and train, retained their distinctive uniforms.

The whole army of the North German Confederation was, in 1870, armed with the needle-gun and its artillery with rifled breechloading guns on the Wahrendorf system.

The assimilation to the Prussian organisation of that of the armies of Bavaria, Württemberg, Baden, and Hesse-Darmstadt, was not carried out so quickly.

In Bavaria, in 1868, a new military law, analogous to that in force in Prussia, was passed. The infantry battalions were reduced from six to four companies, and the strength of the latter increased, and in 1868, two new rifle battalions, the 9th and 10th, were formed. In 1867, the cavalry was reorganised on the Prussian system, the 3rd Cuirassiers and 3rd Lancers being broken up, and their men used to raise the other regiments to five squadrons of 125 horses. In 1868, also, the

* 13th and 14th Battalions forming the 100th, 15th and 16th the 101st, and then regularly on, 1st and 2nd Battalions the 102nd, 3rd and 4th the 103rd, &c.

artillery and engineers were reorganised. The former were redistributed into four regiments, the 1st and 4th each of eight field and four foot batteries, one park company, and one train squadron, the 2nd and 3rd, each of six field, two horse, and four foot batteries, a park company, and a train squadron. The Engineer Regiment was increased to six field and four fortress companies, and a train squadron. Train battalions, as separate units, were not formed in the Bavarian Army. Permanent army corps were formed, and the Prussian regulations for mobilisation and war formation were introduced. Thirty-two Landwehr districts were detailed, but the requisite number of men not being available, at first only sixteen battalions could be organised. In the matter of armament, the old Podewil rifle had been transformed into a breechloader in 1867, and though the improved Werder Rifle was adopted in 1869, by 1870 only four rifle battalions were armed with it. The artillery were armed with rifled B.L. guns.

In Württemberg, financial considerations prevented the immediate expansion of the army to the strength of a Prussian army corps. In the infantry, the battalions were reduced from five to four companies and a third rifle battalion was formed in 1868. In the cavalry, the fifth squadrons were disbanded, and the remaining sixteen brought up to 119 horses. Of these, ten were to take the field and be completed in horses from those remaining behind. The field artillery was increased to nine batteries of six guns in war, with a larger number of horses than ordinary field batteries so as to be able to act as horse artillery if required. An extra foot battery was raised and the four then formed into an *Abtheilung*. The pioneer company was doubled, a cadre for a fortress company was formed, and a train was organised. The Prussian needle-gun and rifled field-guns were adopted as the armament of the army, and Prussian drill regulations introduced. Eight Landwehr battalions were projected, but only four could at first be formed. An Army Bill, introduced in 1868, fixed the period of presence with the colours at two years.

In Baden, Prussian army institutions were most thoroughly introduced, and the Army Bill of 12th February, 1868, was almost a copy of that of Prussia. In 1867, the rifle battalion became the Fusilier Battalion 1st Regiment, and the two Fusilier Battalions formed the 6th Regiment. In that and the following year Fusilier (third) Battalions were raised for the 2nd to 6th Regiments, and in 1870 the 1st to 6th Regiments took the numbers 109 to 114. In the cavalry, fifth squadrons for all three regiments were formed in 1867. The field artillery was raised to eight field and one horse batteries in 1867-68, and the pioneer company was doubled. The country was divided into ten Landwehr districts, which in 1870 furnished six Landwehr battalions. The Prussian needle gun and field gun were introduced.

The troops of Hesse-Darmstadt, by a special convention,

formed the 25th Division of the North German army. Prussian drill and regulations were adopted, but the only increase to the infantry was a second battalion of rifles. In the cavalry, a fifth squadron was formed in each regiment in 1867. The artillery was increased to one horse and five field batteries, and a train company was formed.

At the outbreak of the war of 1870, the following were the forces placed in the field by United Germany :—

FIELD ARMY.

Contingent.	Battalions Infantry.	Squadrons Cavalry.	Batteries Field Artillery.	Companies Garrison Artillery.	Companies Pioneers.	Horsed Guns.	Combatants.		
							Infantry.	Cavalry.	Garrison Artillery.
							Men.	Men.	Men.
North German Confederation (including Hesse) ¹	396	320	214	—	44	1284	885,800	48,000	—
Bavaria	50	40	32	—	6	192	50,000	5,500	—
Württemberg	15	10	9	—	2	54	15,000	1,600	—
Baden	13	12	9	—	1	54	11,700	1,800	—
Total	474	382	264	—	53	1584	462,300	56,800	—

GARRISON AND DEPÔT TROOPS.

North German Confederation—									
a. Garrisons ²	138	48	27	173	29	162	115,200	7,200	34,000
b. Depôts... ..	122½	76	41	—	13	246	122,800	15,200	—
Bavaria—									
c. Garrisons ³	24	3	—	16	4	—	18,400	90	3,800
b. Depôts... ..	18½	10	8	—	2	24	20,400	1,800	—
Württemberg ⁴	8	6	3	4	1½	12	8,000	900	900
Baden—									
c. Garrisons ⁵	11	1	1	8	1	6	8,600	100	1,200
b. Depôts... ..	6	3	2	—	1	12	4,400	600	—
Total	328	144½	82	201	51½	462	297,500	25,890	40,500
Grand total	802	526½	346	201	104½	2046	759,800	82,690	40,500

¹ Including 82 landwehr battalions, 16 reserve squadrons, 12 reserve batteries, and 4 garrison pioneer companies.

² Including 24 line battalions.

⁴ Including 4 line battalions.

³ Including 8 line battalions.

⁵ Including 5 line battalions.

The effective strength of all these formations (including non-combatants) was in August, 1870 :—

	Men.	Horses.
North German Confederation	982,064	209,403
Bavaria	128,964	24,056
Württemberg	37,180	8,876
Baden	35,181	8,038
Totals	1,183,389	250,373

On the 18th January, 1871, King William of Prussia was proclaimed German Emperor at Versailles, but previous to this, on the 15th November, 1870, Baden and Hesse, on the 23rd Bavaria, and on the 25th Württemberg had entered the German Confederation. On the 16th April, 1871, the constitution of the New German Empire was promulgated, the Prussian conditions of military service being made applicable to all the States of the Empire, the relations of which to the Emperor and Commander-in-Chief are explained in Part I.

On the reduction of the army to a peace footing in 1871, the work of re-organisation was at once taken in hand again. The troops of Württemberg formed the 13th Army Corps, and the eight regiments of infantry took the numbers 119 to 126, the three rifle battalions being added to three of them as Fusilier Battalions. Fusilier Battalions for the remaining five regiments were not completely formed till 1874. In 1871 also the 4th and 2nd *Reiter* Regiments became the 25th and 26th Dragoons, and the 1st and 3rd, the 19th and 20th Lancers. The Field Artillery Regiment, Fortress Artillery *Abtheilung*, and pioneer and train battalions, took the number 13, all these taking the Prussian organisation, and the field artillery regiment being formed into three *Abtheilungen* of three batteries each. Prussian uniforms, with certain distinguishing marks, were also adopted.

The Baden troops, with two Prussian infantry regiments (17th and 22nd), detached from the 7th and 6th Corps, and the 14th Dragoons, detached from the 5th Corps, formed the 14th Army Corps, to part of which were also assigned the garrisons in Upper Alsace. The three Baden Dragoon Regiments took the numbers 20 to 22, and the Field Artillery Regiment, Fortress Artillery *Abtheilung*, and pioneer and train battalions took that of the army corps. The 14th Field Artillery Regiment was organised in three *Abtheilungen* of three batteries each, a battery of the 3rd being horse artillery.

For the garrisons of Lower Alsace and Lorraine, the 15th Army Corps was formed of eight infantry regiments (45th, 42nd, 60th, 47th, 25th, 92nd, 105th, and 126th) detached from the 1st, 2nd, 3rd, 5th, 8th, 10th, 12th, and 13th Corps, four cavalry regiments (10th Dragoons, 4th Lancers, 15th Dragoons, and 15th Lancers) detached from the 1st, 2nd, 6th, and 9th Corps, and a newly raised field artillery regiment of eight batteries in two *Abtheilungen*, a pioneer battalion, and a train battalion, all these latter bearing the number of the army corps. To it were also attached a Bavarian Brigade of two infantry regiments (4th and 8th), the 5th Bavarian Light Horse, and the 10th, 11th, and 12th *Abtheilungen* of fortress artillery.

In 1871 also the two Hesse-Darmstadt Regiments of Light Horse became the 23rd and 24th Dragoons, and a Prussian Railway Battalion was formed in place of the detachments which formerly were mobilised by various pioneer battalions.

The year 1871 saw also the adoption of the new pattern Mauser infantry rifle, but it took several years before the whole army was completely re-armed with it.

The chief work of the year 1872 was the re-organisation of the artillery. Till that year the promotion of officers of field and garrison artillery had been on a common list, to the mutual detriment of both arms, but in 1872 the two were finally separated in Prussia. In the other States, the former system of promotion throughout both arms was adhered to, on account of the small number of officers, and it was only in 1881 that the change was introduced in Bavaria, and in 1887 in Württemberg. The Field Artillery Regiment of each Prussian and the 12th, 13th, and 14th Corps was split up into two regiments, the 1st or Corps Artillery consisting each of two field and one horse artillery *Abtheilungen*, each of three batteries, the 2nd, or Divisional, Regiment of two *Abtheilungen*, each of four batteries. Slight modifications existed in the 12th, 13th, and 14th Corps, and the 15th retained its one regiment only, as before. The total number of batteries was 298, of which 44 were horse artillery. Both regiments of a corps had the same number as the corps, "Corps Artillery," or "Divisional Artillery" being added to the number of the regiment only, but in 1874 the Corps Regiments of the Guard and 1st to 15th Corps became 1st Guard and 1st to 15th Regiments, the divisional regiments of the Guard and 1st to 9th Corps became the 2nd Guard and 16th to 24th Regiments respectively, the Hessian Regiment became Nr. 25, and the Divisional Regiments of the 10th to the 14th Corps took the numbers 26 to 30. The two regiments of each corps formed a field artillery brigade, placed under the Corps Commander. At the same time (1872) the fortress (*Festungs*) artillery was re-named foot (*Fuss*) artillery, and its *Abtheilungen*, battalions, the regiments or battalions being placed under the Corps Commander for discipline. Both field and foot artillery were placed for technical matters under the Inspector-General of Artillery.

In Bavaria in 1872 the train squadrons were taken away from the artillery and engineers and formed into two battalions on the Prussian model, and the Engineer Regiment was split up into two battalions, each of 3 field and 2 fortress companies.

In the same year, the four Hessian infantry regiments took the numbers 115 to 118, the two rifle battalions becoming the Fusilier Battalions of the 115th and 118th, and a new battalion being formed for the 117th.

The 15th Army Corps was strengthened by the 9th Dragoons from the 10th Army Corps.

The new field artillery gun, that with which the German artillery is at present armed, was adopted in 1873, and in the same year the reorganisation of the Bavarian artillery was completed, a new horse battery being added to each of the 2nd and 3rd Regiments, bringing the Bavarian field artillery brigades to the same strength as the Prussian and the total number of batteries up to 300, of which 46 were horse artillery. The park companies were broken up and the foot artillery

organized as in Prussia. The whole of the artillery and train were placed under a special Inspector. A railway company on the Prussian model was also formed in Bavaria.

The Imperial territory of Alsace and Lorraine was divided into 11 Landwehr battalion districts.

The year 1874 saw the work of reorganisation crowned by the new Military Law of the 2nd May, which fixed the strength of the army for a period of seven years at 401,659 men, exclusive of officers, one-year volunteers, paymasters, veterinary surgeons, saddlers, and armourers, divided into 469 battalions, 465 squadrons, 300 field batteries (46 horse), 29 foot artillery battalions, 18 pioneer battalions, 1½ railway battalions, and 18½ train battalions. This organisation had already been completed in that year by the increase of the 12th Foot Artillery to two battalions.

For the next seven years, therefore, but few changes in organisation took place in the army. In 1875 the Landsturm Bill was passed on the 12th February, by which all able-bodied men between 18 and 42 years of age not already in the army were liable to be called out in the event of invasion for the defence of the country. In the same year a second battalion was added to the Prussian railway troops, corresponding reductions being made in other arms so as to remain within the establishment, and the Saxon cavalry had its organisation slightly modified. The Guard Horse and 3rd Horse (*Reiter*) became the Guard Horse and Carabinier Regiments and were equipped as heavy cavalry with Prussian cuirassier helmets, carbines, and swords, while the 1st and 2nd Horse became the 18th and 19th Hussars.

In 1876, the cavalry of the 15th Army Corps was formed into a separate division so as to increase its offensive power, and in the following year the 13th Dragoons from the 9th Corps were added to it. In the former year also the 10th and 11th Foot Artillery Battalions dropped their numbers and became the 15th Regiment. New cavalry regulations were published.

In 1878 some modifications were introduced into the Bavarian army. The number of rifle battalions was out of all proportion to that of line infantry and considerably greater than could be recruited with suitable men, so the 2nd, 7th, and 9th Battalions were formed into the 16th, and the 6th, 8th and 10th into the 17th Infantry Regiment, the 5th Rifle Battalion at the same time becoming the 2nd. In consequence of a strain in the relations with France, the 15th Corps was strengthened by the 7th Lancers from the 8th Corps, who in their turn were replaced by the 7th Dragoons from the 4th Corps. This was the beginning of a movement, which has since (in 1885 and 1886) become more strongly accentuated, for placing as much cavalry as possible on the frontiers, the corps in the interior being reduced proportionately in that arm. The last change of any importance introduced in the first septennate was the

transformation in 1879 of the two Bavarian Cuirassier Regiments into "Heavy Cavalry" Regiments, armed like the Saxon Carabiniers.

On the 6th May, 1880, a new Army Bill was passed. The basis of an army on a peace footing of one per cent. of the population being still demanded by the military authorities, the strength of the army was, after some debate, fixed at 427,274 men, divided into 503 battalions of infantry, 465 squadrons of cavalry, 340 field (including 46 horse) batteries, 31 battalions of foot artillery, 19 pioneer battalions, 2½ railway battalions, and 18½ train battalions. Further, permission was given to call up for training a certain portion of the Ersatz Reserve, which hitherto had only been called up on the outbreak of war. The new regiments, &c., were formed on the 1st April, 1881, in the same manner as previously, each old regiment giving up one company and at once reforming that company from those left to it, the deficiency in establishment being made up by recalling men in their third year of service from furlough. In the infantry, the 97th, 98th, 99th, 128th, 129th, 130th, 131st, and 132nd regiments were thus formed by Prussia and the States administered by her, a fusilier battalion for the 116th Regiment by Hesse-Darmstadt, the 133rd and 134th regiments by Saxony, and the 18th Bavarian Regiment, by Bavaria. The 40 extra field batteries were distributed as follows:—A new (31st) regiment of 8 batteries in 2 *Abtheilungen* was added to the 15th Corps. Two new batteries were formed in the Guard, 1st to 11th, and 2nd and 3rd Bavarian regiments (corps artillery), thus giving each of them two *Abtheilungen* each of 4 field batteries and one *Abtheilung* of 3 horse batteries. Two batteries were added to the 12th (Saxon) regiment, thus giving it 3 *Abtheilungen* of 4 batteries, of which two of the 3rd were horse artillery, and two to the 13th Regiment, raising it to eight batteries. The 11th Foot Artillery Regiment was raised, and the 15th Regiment took the number 10. The 16th Pioneer Battalion was formed and attached to the 15th Army Corps. The new Prussian regiments of infantry were not given the uniform of the corps they were raised by, but all assumed red shoulder-straps with light blue piping on the cuff, thus showing the intention of finally uniting them in a corps. The numbers they received (except No. 132) were likewise those of the Landwehr districts in Alsace and Lorraine.

In 1882 no changes took place, except the formation of four engineer inspections, each with one pioneer and two engineer (fortress) inspections under it, the whole being under an Inspector-General of Engineers. In this year also the 2nd Bavarian Corps, the last of the series, was armed with the Mauser rifle.

In 1884, the last step in the assimilation of the Bavarian to the Prussian organisation was taken by the Royal Infantry Regiment being ordered to recruit all over the kingdom like the Prussian Guards, while the 4th and 8th Regiments (detached

in Lorraine) were attached for recruiting purposes to the 1st and 2nd Corps respectively, similarly to the Prussian Fusilier Regiments. The landwehr districts formerly assigned to those three regiments were handed over to the 16th, 17th, and 18th Regiments which previously had had none.

In 1885 and 1886, the first movements of the new regiments to their future corps, the 15th, took place, the 130th replacing the 45th, which returned to its own corps, the 1st, in the former year, while in 1886, the 98th and 131st were sent to the 15th corps, and the 42nd rejoined the 2nd, thus leaving the former corps stronger by one regiment. The tendency to mass the cavalry on the frontiers was expressed in these two years by the 6th Dragoons from the 4th Corps in 1885, and the 14th Lancers from the 10th Corps in 1886, relieving in the 15th Corps the 4th Lancers and 10th Dragoons respectively, which then returned to the 2nd and 1st Corps. In 1885, the cavalry of the 1st Army Corps was formed into a special division, and, as the relations with Russia were strained, Landwehr Inspectors were appointed in the 1st and 2nd Corps, whose functions were to superintend the mobilisation of the Landwehr and Landsturm on the eastern frontier and command them when formed. In the same year, the Corps of Engineer Officers was reorganised. Up till 1885, those officers had been promoted all on one list, but in that year the field and fortress engineers were definitely separated. Officers of pioneers were placed on a list for promotion in each battalion and those of the engineer department were divided into four inspections, within each of which promotion was to be separate. At the same time the engineer services were reorganised into the present existing pioneer and fortress inspections.

A most important change in organisation was begun in 1886 by the transfer to the Admiralty of certain coast defence works on the North Sea, thus putting all the defence of naval or other ports on to the navy. In consequence of this, the 9th Foot Artillery Battalion, hitherto trained as coast artillery, became available for other duties, and was moved (in 1887) to Cologne. This measure is to be extended at an early date to the works on the Baltic coast also. In 1886 also, the Bavarian army adopted the Prussian spiked helmet, thus doing away with the last distinctive mark of its army, except the colour of uniform. In this year also, consequent on the death of the Duke of Brunswick, the troops of that Duchy were incorporated in the Prussian army and received Prussian uniforms.

Towards the end of 1886 the state of European politics was such that the military authorities in Germany deemed it necessary to ask for an increase of the army in 1887, calculated on the basis of one per cent. of the population, instead of waiting till the expiration of the septennate in 1888. The debates in the Reichstag were prolonged and bitter, and numerous compromises were offered to Government, such as reduction of the period of service, granting of the increased

strength for three years only, &c., but all these were uniformly rejected, the military authorities holding out that three years was the shortest time in which a soldier could be not only drilled but disciplined, and that it was absolutely necessary to have the effective of the army fixed for a period of seven years to ensure efficiency. The new Army Bill having been thrown out by a majority in the Reichstag, that assembly was dissolved, and, after a new and more patriotic one had been elected, on the 11th March, 1887, the Bill was passed. It provided for the peace strength of the army being fixed at 468,409 men, divided into 534 battalions of infantry, 465 squadrons of cavalry, 364 field (including 47 horse) batteries, 31 battalions of foot artillery, 19 battalions of pioneers, $4\frac{1}{2}$ railway battalions, and $18\frac{1}{2}$ train battalions.

The new regiments, &c., were all formed on the 1st April, 1887, and were as follows:—

Of infantry, Prussia formed four (the 135th to 138th), and Saxony one (the 139th) regiments. To save the expense of new regimental staffs, the remaining battalions were formed by Prussia and attached to the 13th, 14th, 16th, 17th, 18th, 39th, 40th, 65th, 55th, 80th, 85th, 112th, 113th, 114th, and 129th Regiments. Saxony formed the 15th Rifle Battalion. At the same time the battalions of the new regiments, and of those to which fourth battalions had been added were numbered from 1 to 3 or 4, the name "Fusilier" Battalion being dropped.

In the field artillery, a new battery was added to the 2nd Guard, 13th to 24th, 26th to 27th, 29th, 30th, and 31st Regiments, and 1st and 4th Bavarian Regiments, and all those were formed into three *Abtheilungen* of three batteries each. To the 25th Regiment was added a field battery, giving it in all six field and one horse batteries in two *Abtheilungen*, and to the Saxon army were added one horse and two field batteries, upon which the 12th Regiment had two field *Abtheilungen* of four batteries and one horse *Abtheilung* of three batteries, and the 28th three field *Abtheilungen* each of four batteries.

Of railway troops, Prussia formed six, Saxony one, and Württemberg one company, and these together formed the 3rd and 4th Battalions of the Railway Regiment. In Bavaria a new company was formed which was combined with the existing company to form a battalion.

In the train, a third company was formed for the 1st, 3rd to 11th, 12th, 13th, 14th and 15th Battalions, which hitherto had had only two companies each.

An increase of the higher cadres was required for these new formations, and accordingly a third division (the 32nd and 33rd) was added to the 12th and 15th Corps respectively. The 12th Corps comprised only Saxon troops, but to the 15th Corps were assigned not only the four new Prussian Regiments, but also the 97th Regiment. A change of garrison also took place between the 92nd and 47th (15th Corps) and the 67th (10th Corps) and the 99th (5th Corps) respectively.

Numerous other changes took place in 1887, foremost of which was the re-arming of the entire infantry with the magazine rifle, a step which at once placed the German army on an equality with any combination which could be made against it. Various modifications in infantry equipment were introduced, the helmet lightened, the mode of carrying the knapsack, haversack, water bottle, and intrenching tool altered, and black belts were, with a few exceptions, universally introduced. The forage ration of the cavalry was increased. The last bond between the field and foot artillery was severed by the appointment of separate Inspectors-General for each, and by the formation of the field and foot artillery into four separate inspections each.

The winter of 1887-88 was marked by a renewal of war rumours in Europe, and it was considered necessary to still further increase the organised fighting strength of the Empire. With this view, a bill was introduced, which became law on the 11th February, 1888, by which the old 2nd Ban of the Landwehr, abolished in 1867, was reintroduced, and all persons liable to serve in it were ordered to report themselves within a month with a view to their names being replaced upon the rolls of the Landwehr. The period of obligatory personal military service has been thus extended to what it had been fixed at in 1814, with this exception, that the period of reserve service is now four years and that in the 1st Ban of the Landwehr five years. The liability to army service ceases on the 31st March of the year in which the citizen completes his 39th year. The number of trainings to which certain men of the Ersatz Reserve could be summoned was reduced from four to three, but the length of the two latter trainings was increased. The old numbering of the Landwehr battalion districts by regiments corresponding to those of the line was abolished, and each district received simply the name of its headquarters.

Among minor changes in 1888 up to date may be noticed the transfer of the 22nd Regiment from the 14th Corps to the 6th, of the 25th from the 15th Corps to the 14th, and of the 132nd from the 6th Corps to the 15th, all of which are to be carried out on the 1st April, 1888.

This brings the changes in the German army up to the present date. Details have been purposely entered into to show how closely every change in military science and every change in the political situation is followed by the German General Staff, and how, once the utility or necessity of changes in organisation is recognised, these changes are carried out on the spot, regardless of the opposition of antagonistic party politicians.

J. M. GRIERSON,
Capt. and D.A.Q.M.G.

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Fig. 1.

Company in

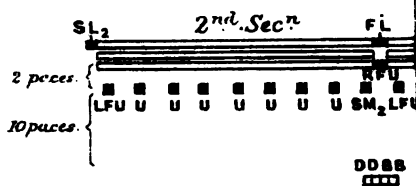
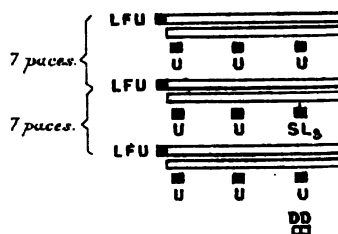


Fig. 2. Company (on the right of the



*N.B. In Figs. 1 and 2 F.L.-First Lieut.; S.L.-
Lieut.; S.M.₁ or ₂-Sergt. Maj. or Vice-Ser.
L.F.U.-Left Flank Underofficer; U-Underofficer.*

Fig. 3.

Battalion in Line of

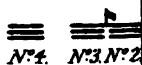
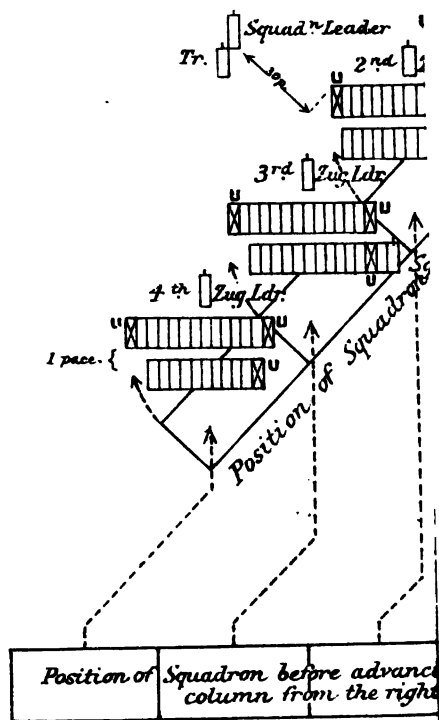


Fig. 4.

Battalion in Column in



Fig.8. A Squadron i



N. B. Both modes of forming halt

Fig.9. Head of Squadron

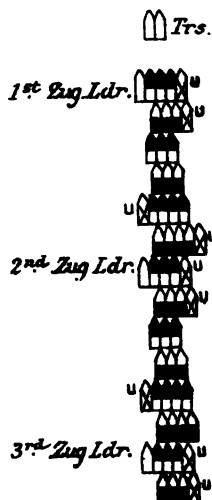


Fig. 10.

Regiment in

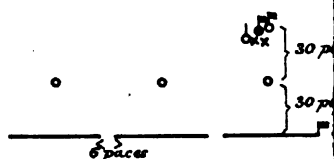


Fig. 11. Regiment in Line of

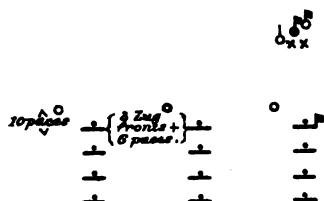


Fig. 12. Regiment in Line of
wheeled

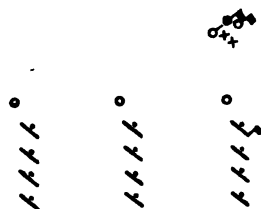


Fig. 13. Regiment in Half Colu



Note. In figs. 10 to 18 the following

Regimental Comm^r ♂

Adjutant ♀

Field Officer ♂

Squadron Leader ○

Zug Leader •

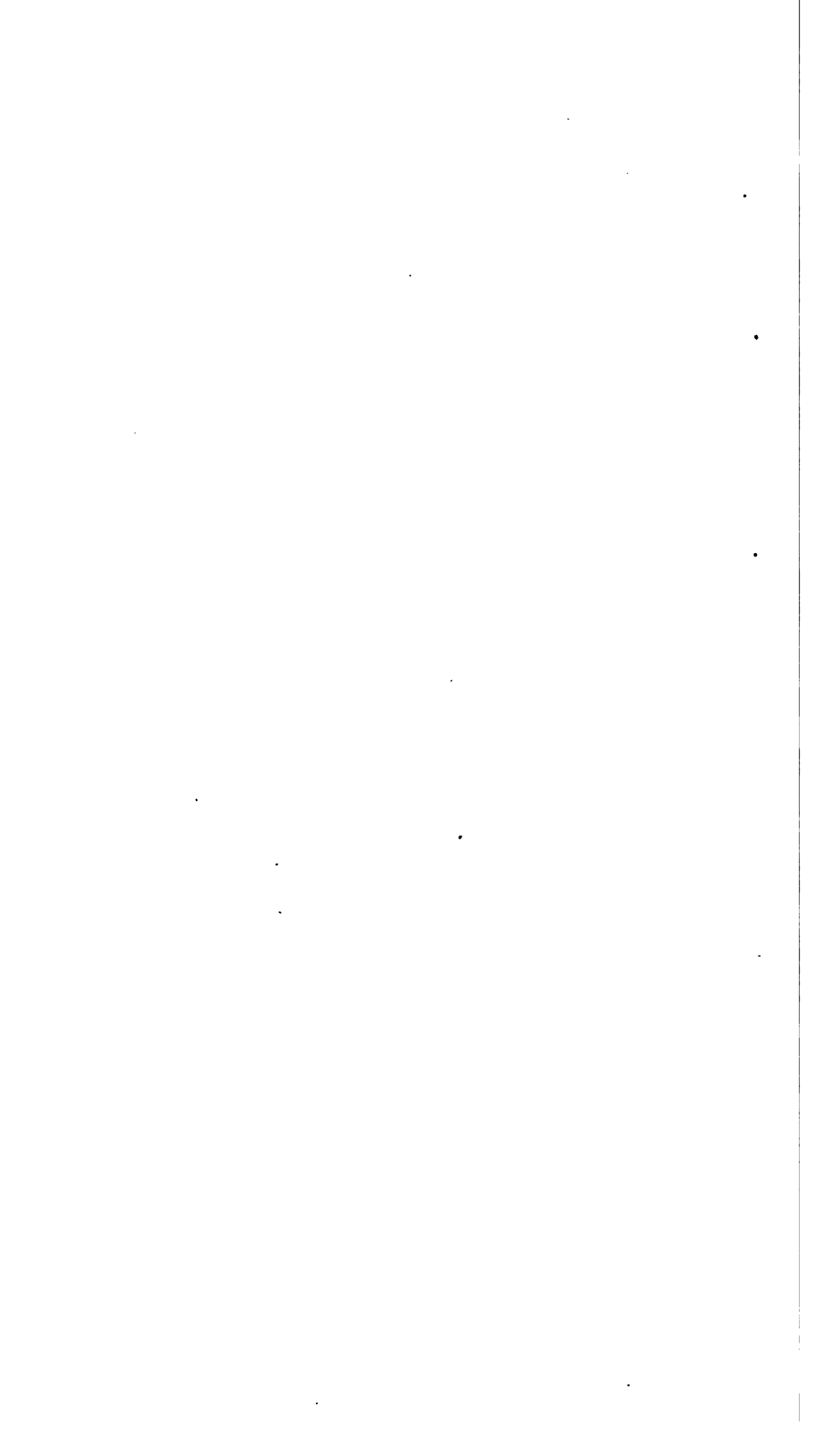


Fig. 14. A Regiment in H.

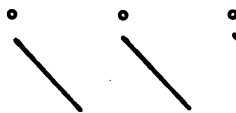


Fig. 15. Regiment in Regimental Column.

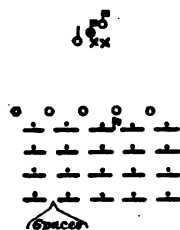


Fig. 16. Regiment in Regimental Column, Züge wheeled half

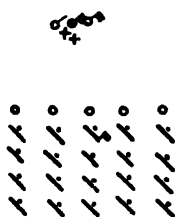


Fig. 18. Regiment in

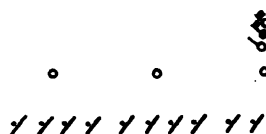
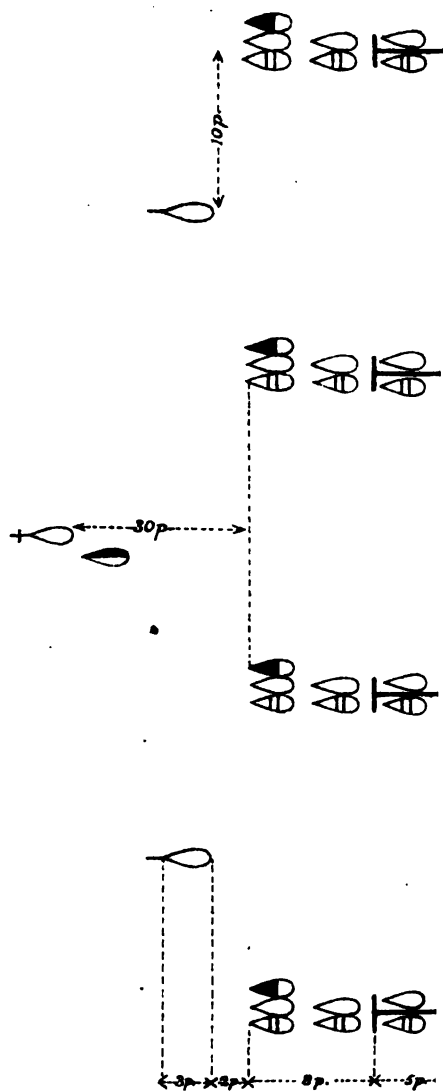
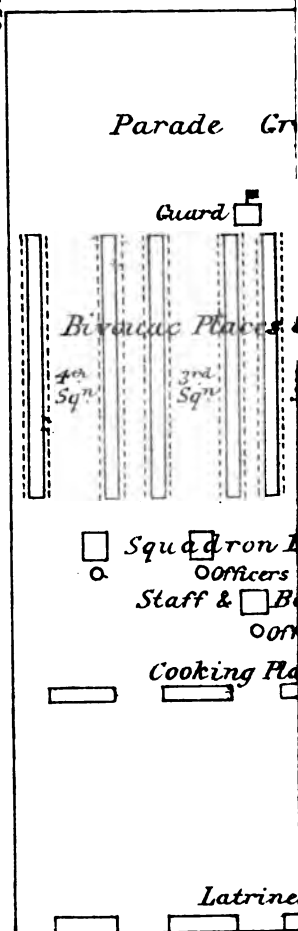


Fig. 19. Field Battery of 4 guns in Line at full interval.

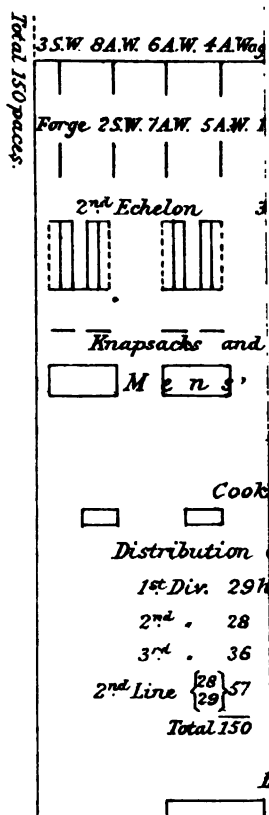


Bivouac of a Cav

Total 150 paces.



Bivouac of



N. B. For a H.A. Battery 1
for horse-lines and the
in rear of their horses.
in the lines is as follow

1 st Div.	48 horses
2 nd	48
3 rd	60
2 nd Line	{36 44} 80
Total	236

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